

Exhibit J

<p style="text-align: right;">Page 1</p> <p>1 IN THE UNITED STATES DISTRICT COURT NORTHERN 2 DISTRICT OF ALABAMA SOUTHERN DIVISION 3 CIVIL ACTION NUMBER 2:16-CV-01443-AKK 4 5 BLACK WARRIOR RIVERKEEPER, INC., 6 PLAINTIFF, 7 VS. 8 DRUMMOND COMPANY, 9 DEFENDANT. 10 11 12 13 14 15 16 17 18 19 20 21 DEPOSITION OF LOIS GEORGE 22 MONDAY, JUNE 25, 2018 23 JOB NUMBER 235563</p>	<p style="text-align: right;">Page 3</p> <p>1 IT IS FURTHER STIPULATED AND AGREED that 2 the signature to and the reading of the 3 deposition by the witness is reserved, the 4 deposition to have the same force and effect as 5 if full compliance had been had with all laws and 6 rules of Court relating to the taking of 7 depositions. 8 IT IS FURTHER STIPULATED AND AGREED that it 9 shall not be necessary for any objections to be 10 made by counsel as to any questions, except as to 11 form or leading questions, and that counsel for 12 the parties may make objections and assign 13 grounds at the time of the trial, or at the time 14 said deposition is offered in evidence or prior 15 thereto. 16 IT IS FURTHER STIPULATED AND AGREED that 17 notice of filing of this deposition by the 18 Commissioner is waived. 19 In accordance with Rule 5(d) of Alabama 20 Rules of Civil Procedure, as amended, effective 21 May 15, 1988, I, Donna Winters, am hereby 22 delivering to Barry A. Brock, Esquire, the 23 original transcript of the oral testimony taken</p>
<p style="text-align: right;">Page 2</p> <p>1 S T I P U L A T I O N 2 IT IS STIPULATED AND AGREED by and between 3 the parties through their respective counsel, 4 that the deposition of LOIS GEORGE may be taken 5 before Donna Winters, Commissioner and Notary 6 Public, State of Alabama at Large, at the law 7 offices of Southern Environmental Law Center, 8 2829 Second Avenue South, Suite 282, Birmingham, 9 Alabama 35233, on the 25th day of June, 2018 10 commencing at 9:50 a.m. 11 DEPOSITION OF LOIS GEORGE 12 13 14 15 16 17 18 19 20 21 22 23</p>	<p style="text-align: right;">Page 4</p> <p>1 on the 25th day of June, 2018, along with 2 exhibits. 3 Please be advised that this is the same and 4 not retained by the Court Reporter, nor filed 5 with the Court. 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23</p>

<p style="text-align: right;">Page 5</p> <p>1 E X H I B I T S</p> <p>2 EXHIBIT PG DESCRIPTION</p> <p>3 PX-1 12 November 17, 2017 PELA Expert Report</p> <p>4 PX-2 96 Historic aerial photos and maps</p> <p>5 PX-3 60 Photographs, Bates PELA 27 through 59.</p> <p>6 PX-4 May 25, 2018 Rebuttal Report</p> <p>7 PX-5 CD with pictures (retained by counsel)</p> <p>8 PX-6 63 Figure 1: Location of Monitoring Sites</p> <p>9 PX-7 83 Figure photograph showing ditches</p> <p>10 PX-8 45 Testimony provided by Lois George</p> <p>11 PX-9 115 12-12-78 Memorandum from Sam Gilbert to</p> <p>12 Jack McDuff re: Inspection Report Maxine Mine</p> <p>13 PX-10 121 7-5-79 Notice of Violation</p> <p>14 PX-11 123 8-6-79 Letter from PELA to Doug Cook</p> <p>15 re: Maxine Mine - Rock Storage - Discharge</p> <p>16 Problem</p> <p>17 PX-12 127 8-21-79 Letter from PELA to Doug Cook</p> <p>18 re: Maxine Mine - Rock Disposal Area</p> <p>19 PX-13 128 11-1-79 Letter from D.R. Cook to PELA</p> <p>20 re: Maxine Mine Geologic and Hydrologic Study</p> <p>21 PX-14 129 11-6-79 Letter from PELA to Doug Cook</p> <p>22 re: detailed progress statement of work</p> <p>23 PX-15 131 11-16-79 Letter from PELA to Doug Cook</p>	<p style="text-align: right;">Page 7</p> <p>1 PX-28 181 8-26-82 Letter from PELA to Tom Musick</p> <p>2 PX-29 183 12-13-82 Letter from PELA to Doug Cook</p> <p>3 PX-30 184 12-15-82 Letter from PELA to Doug Cook</p> <p>4 PX-31 186 2-11-83 Letter from PELA to Tom Musick</p> <p>5 PX-32 187 4-22-83 Maxine Rock Disposal Area</p> <p>6 Surface and Groundwater Monitoring</p> <p>7 PX-33 191 7-26-83 Memo from Ronnie Key to Tom</p> <p>8 Musick re: ADEM Inspection of Maxine Mine on</p> <p>9 Tuesday, July 26, 1983</p> <p>10 PX-34 194 12-8-83 Letter from D.R. Cook to</p> <p>11 Richard Simon</p> <p>12 PX-35 196 4-5-84 Maxine Rock Disposal Area</p> <p>13 Surface and Groundwater Monitoring report by PELA</p> <p>14 PX-36 202 10-5-84 Maxine Rock Disposal Area</p> <p>15 Hydrologic and Water Quality Investigations</p> <p>16 PX-37 208 Order</p> <p>17 PX-38 209 7-21-92 Letter from ADEM to Clifton</p> <p>18 McRoy re: Maxine Mine NPDES Permit</p> <p>19 PX-39 210 7-7-92 Letter from Drummond Company,</p> <p>20 Inc. to Dwight Hicks re: NPDES Permit Maxine Mine</p> <p>21</p> <p>22</p> <p>23</p>
<p style="text-align: right;">Page 6</p> <p>1 re: Maxine Mine - Rock Storage Area Study</p> <p>2 PX-16 133 11-16-79 Letter from PELA to Doug Cook</p> <p>3 PX-17 136 1-24-80 Letter from PELA to Doug Cook</p> <p>4 with attached Conclusions</p> <p>5 PX-18 140 1-28-80 Letter from PELA to Bruce Smith</p> <p>6 re: Maxine Mine Rock Storage Study</p> <p>7 PX-19 145 2-4-80 Termination of Notice</p> <p>8 Violation(s)</p> <p>9 PX-20 146 3-10-80 Letter from PELA to Doug Cook</p> <p>10 PX-21 147 7-30-80 Memorandum For the Record re:</p> <p>11 Maxine Rock Storage Area Project</p> <p>12 PX-22 157 10-2-80 Letter from PELA to Doug Cook</p> <p>13 PX-23 160 12-30-80 Letter from PELA to Doug Cook</p> <p>14 PX-24 162 January 1981 Assessment of Effect of</p> <p>15 Drainage from the Rock Storage area, Maxine Mine</p> <p>16 PX-25 167 7-30-82 Supplement to Permit</p> <p>17 Application for Coal Processing Waste Disposal</p> <p>18 PX-26 177 7-30-82 Addendum to Alabama By-Products</p> <p>19 Corporation Maxine Mine Supplement to Permit</p> <p>20 Application for Coal Processing Waste Disposal</p> <p>21 PX-27 180 PELA Outline Work Elements Proposed for</p> <p>22 Assessment of Hydrologic Conditions of the Capped</p> <p>23 Area, Maxine Rock Disposal Area</p>	<p style="text-align: right;">Page 8</p> <p>1 I N D E X</p> <p>2 EXAMINATION BY: PAGE NUMBER</p> <p>3 Mr. Brock 9 - 212</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10 A P P E A R A N C E S:</p> <p>11 SOUTHERN ENVIRONMENTAL LAW CENTER, by</p> <p>12 Messrs. Barry A. Brock, Keith Johnston, and Ms.</p> <p>13 Christina Andreen, 2829 Second Avenue South,</p> <p>14 Suite 282, Birmingham, Alabama 35233, appearing</p> <p>15 for the Plaintiff. Bbrock@selcal.org</p> <p>16 kjohnston@selcal.org</p> <p>17 BLACK WARRIOR RIVERKEEPER, by Ms. Eva</p> <p>18 Dillard, 712 37th Street South, Birmingham,</p> <p>19 Alabama 35222, appearing for the Plaintiff.</p> <p>20 STARNES DAVIS FLORIE, by Mr. Richard E.</p> <p>21 Davis, Seventh Floor, 100 Brookwood Place,</p> <p>22 Birmingham, Alabama 35209, appearing for the</p> <p>23 Defendant. Rdavis@starneslaw.com</p>

<p style="text-align: right;">Page 9</p> <p>1 I, Donna Winters, a Court Reporter of 2 Birmingham, Alabama, acting as Commissioner, and 3 a Notary Public for the State of Alabama at 4 Large, certify that on this date, as provided by 5 Rule 30 of the Alabama Rules of Civil Procedure, 6 and the foregoing stipulation of counsel, there 7 came before me, LOIS GEORGE, witness in the above 8 cause, for oral examination, whereupon the 9 following proceedings were had: 10 11 LOIS GEORGE, 12 having been first duly sworn, was examined 13 and testified as follows: 14 15 COURT REPORTER: Usual stipulations? 16 MR. DAVIS: She would like to read and 17 sign; but otherwise, yes. 18 MR. BROCK: Yes. 19 20 EXAMINATION BY MR. BROCK: 21 Q. Good morning. Would you state your full 22 name and address for the record, please? 23 A. Lois D. George.</p>	<p style="text-align: right;">Page 11</p> <p>1 fact witness, I would say, in this instance. Is 2 that a fair assessment? 3 A. Yes, sir. 4 MR. DAVIS: And let me just interject here, 5 the retention is for Lois's work as an expert 6 witness. She is a fact witness, not separately 7 retained, but here to talk about any facts as 8 well. Does that make sense? 9 MR. BROCK: Understood. And we're going 10 to, hopefully, flesh that out some today. 11 Q. I know it may be a little difficult at 12 times to determine what's in the expert bucket 13 and what's in the fact bucket, but I'm going to 14 try to do that, and ask you about all your 15 opinions in your report, and also ask you about 16 some historical documents and records, and see 17 what your recollection is of those events, okay? 18 A. Very good. Thank you. 19 Q. I'm not doing it to punish you or to go 20 back through a lot of old documents. It's 21 because we really are interested in some of these 22 events that happened back in the '80s; and there 23 aren't that many people around, we've discovered,</p>
<p style="text-align: right;">Page 10</p> <p>1 Q. And your address? 2 A. 1141 Mallard Circle, Tuscaloosa, Alabama 3 35405. 4 Q. Ms. George, my name is Barry Brock. I'm 5 one of the attorneys for Black Warrior 6 Riverkeeper in this lawsuit that's pending in the 7 Northern District of Alabama against Drummond 8 Company, and I understand you've been retained as 9 an expert in that case. Is that correct? 10 A. Yes, in part. 11 Q. And you say "in part." In what other 12 capacity have you been retained? 13 A. I think I've been retained for factual 14 information, historical information. 15 Q. Right. We're going to go through some of 16 that. As I understand, you were actually on the 17 site for a period of time in the late '70s and 18 early '80s; is that correct? 19 A. Yes, sir. 20 Q. Your report says 1979 through '84. Is that 21 accurate? 22 A. Yes. Yes, it is. 23 Q. So actually, you are both an expert and a</p>	<p style="text-align: right;">Page 12</p> <p>1 who have personal knowledge about it, so that's 2 the reason that we're asking about it, okay? 3 A. Yes. 4 Q. And I will try not to let it get tedious, 5 but we do have a lot of documents to go through, 6 so please bear with me on that, okay? 7 A. Will do. 8 (Whereupon, Plaintiff's Exhibit Number 1 9 was marked for identification, a copy of which is 10 attached to the original of the transcript.) 11 Q. Let me show you what I've marked as Exhibit 12 1 to your deposition, and take your time to look 13 through that. Is that a complete copy of your 14 Expert Report in this case? 15 A. Yes, it appears to be. 16 Q. Did you draft this report yourself? 17 A. Yes, I did. 18 Q. Did anyone else at -- I'm going to call 19 Lamoreaux & Associates PELA today, is that okay? 20 A. That's great. 21 Q. Did you pronounce it "PELA" or "PELLA"? 22 A. It's PELA. Pella are the blinds. 23 Q. PELA?</p>

<p style="text-align: right;">Page 13</p> <p>1 A. PELA.</p> <p>2 Q. So when I say that, you'll know what I'm</p> <p>3 referring to, I trust?</p> <p>4 A. Yes.</p> <p>5 Q. You've been at PELA since 1976; is that</p> <p>6 correct?</p> <p>7 A. Yes.</p> <p>8 Q. Did anyone else at PELA work on this with</p> <p>9 you?</p> <p>10 A. Word processor.</p> <p>11 Q. And if you would turn in the report, it has</p> <p>12 a copy of your resume attached as Appendix A.</p> <p>13 It's right after page 14. Do you see that?</p> <p>14 A. Yes, sir.</p> <p>15 Q. Is this a current edition of your resume?</p> <p>16 A. Yes.</p> <p>17 Q. If you would, first, tell us about your</p> <p>18 educational background, starting with</p> <p>19 undergraduate.</p> <p>20 A. I have a bachelor's degree in geology from</p> <p>21 SUNY Fredonia, which is in Upstate New York in</p> <p>22 Buffalo. I actually have a double major in</p> <p>23 geology and art.</p>	<p style="text-align: right;">Page 15</p> <p>1 A. No, I did not.</p> <p>2 Q. How many hours of postgraduate credit did</p> <p>3 you earn at The University of Alabama?</p> <p>4 A. I believe it was 15, but I'm not certain at</p> <p>5 the moment.</p> <p>6 Q. Were you in a particular master's degree</p> <p>7 program?</p> <p>8 A. No. No.</p> <p>9 Q. How did you get from Buffalo, New York to</p> <p>10 Tuscaloosa, Alabama?</p> <p>11 A. At the time I graduated from Fredonia, most</p> <p>12 of my colleagues were going into the oil and gas</p> <p>13 industry and moving to somewhere in Texas,</p> <p>14 Louisiana or New York City, for the most part,</p> <p>15 and I didn't care to do that. I looked into</p> <p>16 research institutes and ended up at the</p> <p>17 Geological Survey of Alabama.</p> <p>18 Q. So was that your first job in Alabama?</p> <p>19 A. Yes.</p> <p>20 Q. What did you do there?</p> <p>21 A. I was a draftsman and editor, and I worked</p> <p>22 in the mineral resources division at the</p> <p>23 Geological Survey.</p>
<p style="text-align: right;">Page 14</p> <p>1 Q. What year did you graduate?</p> <p>2 A. 1975.</p> <p>3 Q. Are you from New York originally?</p> <p>4 A. Yes, I am.</p> <p>5 Q. Is that where you went to high school and</p> <p>6 grew up?</p> <p>7 A. Yes.</p> <p>8 Q. What formal education have you had after</p> <p>9 you obtained your geology degree?</p> <p>10 A. I took a number of graduate courses at The</p> <p>11 University of Alabama. I've taken specialized</p> <p>12 training, short courses in various subjects on</p> <p>13 hydrogeology and field methods and</p> <p>14 report-writing. I've also been an instructor on</p> <p>15 some of those aspects, too. I taught several day</p> <p>16 classes at The University of Alabama as a</p> <p>17 substitute teacher for Dr. Lamoreaux when he was</p> <p>18 part of the faculty, and we've had in-house</p> <p>19 training that counts as continuing education</p> <p>20 also.</p> <p>21 Q. Thank you. And we'll go through some of</p> <p>22 that on your resume. Did you obtain a master's</p> <p>23 degree?</p>	<p style="text-align: right;">Page 16</p> <p>1 Q. How long were you in that position?</p> <p>2 A. It was about a year.</p> <p>3 Q. And then after that, where did you go?</p> <p>4 A. With P.E. Lamoreaux & Associates.</p> <p>5 Q. On your resume, there are some professional</p> <p>6 registrations that are listed, I want to ask you</p> <p>7 about some of those. The American Institute of</p> <p>8 Professional Geologists, it indicates you have a</p> <p>9 certificate number on that. How do you earn that</p> <p>10 certificate?</p> <p>11 A. It was based on five years' experience --</p> <p>12 I'm sorry, I believe it was three years'</p> <p>13 experience, and written sponsorships from three</p> <p>14 professionals, I believe.</p> <p>15 Q. How long have you had that certificate?</p> <p>16 A. 35 years.</p> <p>17 Q. Do you consider yourself to have a</p> <p>18 specialty or a special area of knowledge within</p> <p>19 the field of geology?</p> <p>20 A. Yes, that would cover several areas.</p> <p>21 Q. Tell us what those would be.</p> <p>22 A. I guess first would be coal resources and</p> <p>23 hydrogeology, associated with coal deposits and</p>

<p style="text-align: right;">Page 17</p> <p>1 coal mining. General environmental issues; 2 geomorphology and air photo interpretation. 3 Q. What form of training or experience have 4 you had with air photo interpretation? 5 A. Several of the courses in undergraduate 6 school, the professor I had was a 7 geomorphologist, and we studied aerial 8 photography and maps by different methods using 9 stereoscopes and different visual aids. Also, 10 when I was at the Geological Survey, I believe 11 the geologist's name was Jim Drahozal. He was 12 one of the senior geologists, and his specialty 13 was air photo interpretation. I did some 14 projects, really his mappings, and also 15 coordinated some of my efforts with him when I 16 started at P.E. Lamoreaux & Associates. We use 17 aerial photography in a lot of projects. 18 Q. Okay. It looks like from your resume, that 19 you -- 20 A. I'm sorry, I did put together a short 21 course on remote sensing that was part of a 22 continuing education seminar. I can't remember 23 the date now, but it was put together for</p>	<p style="text-align: right;">Page 19</p> <p>1 did you have to do to attain that license and 2 designation in Florida? 3 A. Essentially the same thing. And the reason 4 there's a little bit of difference in the title 5 is because the states give them a different 6 designation. 7 Q. Is it all basically the same process, that 8 you need a certain number of years of experience 9 and references? 10 A. Yes, it did at the time. I was certified 11 back in the grandfathering phase. Most of these, 12 now exams are required for the licensure. 13 Q. I appreciate that clarification. So for 14 any of the states that you list, did you have to 15 take an exam? 16 A. Not for the states; but for the certified 17 environmental auditor, I took a 40-hour course 18 and an examination. 19 Q. What is a Certified Environmental Auditor 20 or CEA? 21 A. It's a certification that represents a 22 certain class of capabilities relative to 23 environmental regulations and processes of</p>
<p style="text-align: right;">Page 18</p> <p>1 geologists' continuing education, and that was 2 one component of the seminar. 3 Q. Aerial photo interpretation? 4 A. Remote sensing and aerial photos. 5 Q. Your resume indicates that you are a 6 licensed professional geologist in the state of 7 Alabama. Is that correct? 8 A. Yes, sir. 9 Q. And how long have you had that designation? 10 A. Since the program started. 2002? I'm 11 sorry, I just don't remember the date. 12 Q. That's okay, as close as you can remember 13 is fine. What does one have to do to become a 14 licensed professional geologist? 15 A. In Alabama? 16 Q. Yes, ma'am. 17 A. At the time, five years' experience; and, 18 again, I believe it was three references from 19 other professionals. 20 Q. It looks like you list eight other states 21 where you have a similar-type designation. Are 22 those different in any way? Like, for example, 23 Florida, you list professional geologist. What</p>	<p style="text-align: right;">Page 20</p> <p>1 evaluation of properties. 2 Q. When did you complete that course? 3 A. I believe it was 1993 or 1994. 4 Q. And you said you took a written exam? 5 A. Yes. 6 Q. Was that in Alabama? 7 A. Yes. The certification is to the National 8 Registry of Environmental Professionals. 9 Q. Ms. George, working down your resume here, 10 it indicates that you were the chief of PELA's 11 coal division from 1978 to 1984. Is that 12 correct? 13 A. That's correct. 14 Q. And what were your duties in connection 15 with being chief of that division? 16 A. I think it's pretty well spelled-out in my 17 resume, but I guess what's not spelled-out is 18 report-writing and project management, 19 contracting drillers and other subcontractors; 20 coordination with the clients and regulatory 21 authorities, depending on the project. 22 Q. Looking specifically at some of the things 23 that you listed about midway through the</p>

<p style="text-align: right;">Page 21</p> <p>1 paragraph, it says "Sedimentation and water 2 quality studies in areas affected by mining." Do 3 you see that part? 4 A. Yes, sir. 5 Q. Can you elaborate on any projects that 6 you've worked on or that you did work on that 7 would involve that activity? 8 A. Well, the Maxine rock disposal area 9 certainly comes to mind, and we did permit a 10 number of underground and surface mines 11 throughout the state of Alabama, and there were a 12 number of those investigations that included an 13 assessment of current activities and monitoring 14 that was being done by the mining companies. We 15 were also contracted by the Office of Surface 16 Mining to do a project in Tennessee, I believe it 17 was the White something Watershed. It covered a 18 large area, and we were contracted by the Office 19 of Surface Mining to investigate potential 20 pollution to surface water and groundwater as a 21 result of mining, coal mining. 22 Q. Was that at one mine site in Tennessee, or 23 multiple?</p>	<p style="text-align: right;">Page 23</p> <p>1 and assisted a couple small mining companies in 2 the Cahaba coal field; and I'm sorry, I don't 3 remember their names either. 4 Q. That was my next question. During this 5 period 1978 to '84, what mining companies did 6 PELA perform services for? 7 A. First, I would like to say that we have a 8 nondisclosure policy, and I consider all of our 9 projects confidential; so other than what we're 10 referring to here today, I would rather not go 11 into much detail. I can recount where the mines 12 are, what coal field they're in, and some of the 13 aspects of the work. 14 Q. Well, let me ask you this. Did PELA 15 perform work for Alabama Byproducts, ABC, at 16 mines other than Maxine? 17 A. Yes. 18 Q. On how many occasions? 19 A. Occasions? 20 Q. Yes. How many mines, however you want to 21 define it, how many projects? 22 A. I can't tell you how many projects, because 23 there were different aspects of work we were</p>
<p style="text-align: right;">Page 22</p> <p>1 A. I believe it covered multiple mine sites. 2 Q. So as to this sedimentation and water 3 quality studies, can you remember the names of 4 any mine sites in Alabama, other than Maxine, 5 where you performed that type of work? 6 A. Knob Mine, Bankhead, Chetopa. I believe 7 there were some in eastern Walker County that 8 were associated with Cobb Coal Mining. They had 9 a number of mines; but, I'm sorry, I don't 10 remember the name of the specific mine. That's 11 all the names I can think of right now. 12 Q. Okay. Very good, thank you. You also list 13 geologic and hydraulic studies for mine 14 permitting and operating requirements. Can you 15 recall any mines where you did that type work, 16 other than the Maxine Mine? 17 A. I don't remember all their names, but there 18 were a number of companies that we did work for 19 that had multiple surface mines and underground 20 mines. I believe we permitted -- assisted in 21 permitting eleven underground mines, and I think 22 it was 22 surface mines. We also worked for the 23 Small Operators Assistance Program in Alabama,</p>	<p style="text-align: right;">Page 24</p> <p>1 doing, but we did work in permitting at all of 2 their mines. 3 Q. Roughly, what would that number be? 4 A. Six, six mines. 5 Q. During that same time period, did PELA 6 perform services for Drummond Company at any of 7 its mines? 8 A. No, we did not. 9 Q. Other than this case involving Maxine, has 10 PELA worked for Drummond before? 11 A. I believe we did some geophysical logging 12 in the Kellerman area. That's all the work we 13 did directly for Drummond. 14 Q. Can you spell that? 15 A. Kellerman? 16 Q. Yes. 17 A. K-E-L-L-E-R-M-A-N. It's in the Brookwood 18 area. 19 Q. What year would that have been? 20 A. Probably sometime in the 1980s. 21 Q. During this time period we're looking at, 22 '78 to '84, did PELA do work for other mining 23 entities or companies that were affiliated with</p>

<p style="text-align: right;">Page 25</p> <p>1 Drummond Company?</p> <p>2 A. Not that I know of, no.</p> <p>3 Q. One of the things that you list that you</p> <p>4 did during that time frame was water quality and</p> <p>5 environmental assessment of surface and</p> <p>6 underground mine areas. Other than the Maxine</p> <p>7 project, can you list any others where you did</p> <p>8 that kind of work?</p> <p>9 A. All the mines where we helped with the</p> <p>10 permit applications; we installed monitoring</p> <p>11 wells, and gathered information from the mining</p> <p>12 companies about the geologic setting, and also</p> <p>13 did extensive well inventory, probably thousands</p> <p>14 of wells throughout the Warrior basin and some in</p> <p>15 the Cahaba coal field.</p> <p>16 Q. And would that have included all the six</p> <p>17 ABC mines?</p> <p>18 A. Yes.</p> <p>19 Q. You also list supervision and coordination</p> <p>20 of mine reclamation. First, let me ask, was PELA</p> <p>21 involved in the reclamation work at the Maxine</p> <p>22 Mine?</p> <p>23 A. Yes, I would say we were.</p>	<p style="text-align: right;">Page 27</p> <p>1 review of other consultants' reports.</p> <p>2 Q. Are you currently working on any matters,</p> <p>3 other than Maxine, that involve coal mining or</p> <p>4 coal waste?</p> <p>5 A. Yes, I am.</p> <p>6 Q. How many?</p> <p>7 A. Currently on the books, I believe it's just</p> <p>8 one.</p> <p>9 Q. Is that a litigation case or something</p> <p>10 else?</p> <p>11 A. No, it's not in litigation.</p> <p>12 Q. Now, you perform litigation services in</p> <p>13 addition to the other things that PELA does,</p> <p>14 right?</p> <p>15 A. Yes.</p> <p>16 Q. How long have you been providing litigation</p> <p>17 support?</p> <p>18 A. I think primarily from the mid '90s, but</p> <p>19 there were a few occasions before that. You're</p> <p>20 asking me personally?</p> <p>21 Q. Yes, ma'am.</p> <p>22 A. That's my answer.</p> <p>23 Q. What percentage of your time currently do</p>
<p style="text-align: right;">Page 26</p> <p>1 Q. We'll get into more detail about that a</p> <p>2 little later. Can you tell us any other mines</p> <p>3 that you worked on at PELA on reclamation</p> <p>4 aspects?</p> <p>5 A. I think there were a couple of the other</p> <p>6 ABC mines, particularly the surface mine, and</p> <p>7 possibly three or four mines in the western part</p> <p>8 of the coal field for another coal company.</p> <p>9 Q. Your present position at PELA is vice</p> <p>10 president of environment and ecology; is that</p> <p>11 correct?</p> <p>12 A. Yes, sir.</p> <p>13 Q. How long have you had that position?</p> <p>14 A. Since the early '90s.</p> <p>15 Q. And you work in the Tuscaloosa office?</p> <p>16 A. Yes.</p> <p>17 Q. What sort of projects do you primarily work</p> <p>18 on now?</p> <p>19 A. Groundwater contamination and remediation;</p> <p>20 environmental assessments; peer reviews; resource</p> <p>21 evaluations.</p> <p>22 Q. What do you mean by "peer reviews"?</p> <p>23 A. Providing consultation to clients regarding</p>	<p style="text-align: right;">Page 28</p> <p>1 you devote to litigation support, compared to</p> <p>2 other work, as a percentage, if you know?</p> <p>3 A. Currently?</p> <p>4 Q. Yes, ma'am.</p> <p>5 A. A lot. Excuse me, I didn't mean to be</p> <p>6 flip.</p> <p>7 Q. No, you're fine.</p> <p>8 A. Can we put some time frame on "currently"?</p> <p>9 Q. Well, by that, I mean open matters that</p> <p>10 you're working on right now.</p> <p>11 A. I guess of all the projects that might be</p> <p>12 open, probably less than 30 percent. The time</p> <p>13 spent on those obviously is going to vary</p> <p>14 depending on the scheduling.</p> <p>15 Q. Less than 30 percent if you look at the</p> <p>16 number of open files; but if you look at the time</p> <p>17 that is spent, it would be greater than that?</p> <p>18 A. Yes, sir.</p> <p>19 Q. What percentage, roughly, would it be, in</p> <p>20 terms of time, your time?</p> <p>21 A. Well, if we look at the last several days,</p> <p>22 it would be a significant amount of time</p> <p>23 preparing for litigation, 85 to 90 percent; but</p>

<p style="text-align: right;">Page 29</p> <p>1 if we spread that out over six months to a year, 2 it would probably bump down to 35 or 40 percent. 3 Q. So 35 to 40 percent of your time over the 4 last calendar year, is what you're saying? 5 A. Yes, I think that's a fair estimate. 6 Q. When you work on litigation matters, do you 7 bill by the hour? 8 A. Yes, sir. 9 Q. And what is your standard rate? 10 A. \$175 an hour. 11 Q. Is that what you're billing in this case? 12 A. Yes. 13 Q. Ms. George, when were you retained to be an 14 expert in this case? 15 A. Last fall sometime. 16 Q. Fall of 2017? 17 A. '17. 18 Q. Have you reviewed the Complaint? 19 A. I believe so, yes. 20 Q. Do you know, one way or the other? 21 A. Yes, I have. It would have been early on. 22 Q. Have you reviewed the Notice of Intent to 23 Sue letter issued by Riverkeeper?</p>	<p style="text-align: right;">Page 31</p> <p>1 A. I do not, sorry. 2 Q. What other materials have you reviewed in 3 connection with generating your report in this 4 case? And if you would like to refer to your 5 references in your report, you're welcome to. 6 A. Okay, thank you. I did review the expert 7 report submitted on behalf of the plaintiffs. 8 That would include Mr. Brown's report, 9 Mr. Johnson's report. I did look through the 10 Sulkin report; Professor Dimova's report; I did 11 review several references that are included in my 12 expert report and my rebuttal report. 13 Q. If you would, turn to page 12 of your 14 report. 15 A. I'm there. 16 Q. Where the references start, this is Section 17 8, correct? 18 A. Yes, sir. 19 Q. Did you put this list together? 20 A. I did. 21 Q. In several places there are documents that 22 are marked DRUM, D-R-U-M, and then a number after 23 them which is the Bates number that we've used</p>
<p style="text-align: right;">Page 30</p> <p>1 A. Yes, I have. 2 Q. Have you reviewed any of the depositions in 3 the case? 4 A. I thumbed through a couple, yes. 5 Q. Which depositions were those? 6 A. Mr. Hicks and Mr. Muncher. 7 Q. Any others? 8 A. No. 9 Q. Did you review the exhibits to those 10 depositions? 11 A. I thumbed through them, yes. 12 Q. Did you meet with Mr. Hicks or Mr. Muncher? 13 A. No, sir. 14 Q. Did you know Mr. Hicks prior to being 15 retained in this case? 16 A. I think we've met on several occasions in 17 the past; and, yes, I know of him. 18 Q. Have you worked with him? 19 A. No, I have not. 20 Q. Did you know Mr. Muncher before you were 21 retained in this case? 22 A. No, I did not, do not. 23 Q. You said you do now?</p>	<p style="text-align: right;">Page 32</p> <p>1 for discovery in this case. Do you see those? 2 A. Yes, sir. 3 Q. Did you review those Drummond Bates-stamped 4 documents? 5 A. You did. 6 Q. How were those documents provided to you? 7 A. Either e-mail or a thumb drive, 8 electronically. 9 Q. Who provided them to you? 10 A. Richard did, Richard Davis. 11 Q. Richard Davis? 12 A. Yes. 13 Q. Have you worked on cases before with 14 Mr. Davis? 15 A. Yes, I have. 16 Q. What cases are those? 17 A. Let's see. State of Alabama versus Alabama 18 Wood Treating. I'm trying to recall the 19 citation. University of Montevallo versus 20 somebody Tennessee; Woods Knoll. 21 Q. I'm sorry, could you say that one again? 22 A. Woods Knoll, K-N-O-L-L, and I'm sure I'm 23 not giving the entire citation, versus the City</p>

<p style="text-align: right;">Page 33</p> <p>1 of Lincoln. I think those are the cases.</p> <p>2 Q. The first case, again, you said State of</p> <p>3 Alabama versus who or whom?</p> <p>4 A. Alabama Wood Treating.</p> <p>5 Q. What year would that have been when you</p> <p>6 worked on that?</p> <p>7 A. 2009-2010.</p> <p>8 Q. Did you give a deposition in that case?</p> <p>9 A. Yes, I did.</p> <p>10 Q. Did you testify at a trial or hearing?</p> <p>11 A. No, I did not.</p> <p>12 Q. Did you do an expert report?</p> <p>13 A. Yes.</p> <p>14 Q. Generally, what was the subject matter of</p> <p>15 your expert report in the case?</p> <p>16 A. The case had to do with the</p> <p>17 responsibility -- I guess in a nutshell, the</p> <p>18 responsibility of contamination of waterfront</p> <p>19 property in the upper Mobile Bay, Mobile River.</p> <p>20 Q. And who were you retained by?</p> <p>21 A. I think it was Starnes.</p> <p>22 Q. Who was Starnes' client?</p> <p>23 A. Alabama Wood Treating. They also had</p>	<p style="text-align: right;">Page 35</p> <p>1 includes these matters, but you're welcome to</p> <p>2 take a look.</p> <p>3 A. If you have dates on some of these, it</p> <p>4 would be helpful to me.</p> <p>5 Q. Sure.</p> <p>6 THE WITNESS: Thank you for answering the</p> <p>7 question.</p> <p>8 Q. Ms. George, are any of the cases, are</p> <p>9 either of the two that you've been testifying</p> <p>10 about listed on page 11 of your report?</p> <p>11 A. Yes, the first one, Woods Knoll versus the</p> <p>12 City of Lincoln.</p> <p>13 Q. But the State of Alabama versus Wood</p> <p>14 Treating and the University of Montevallo cases</p> <p>15 are not listed here; is that right?</p> <p>16 A. That's right.</p> <p>17 Q. How many years does this list of previous</p> <p>18 cases go back, do you know?</p> <p>19 A. The oldest date I have is 2011 for</p> <p>20 depositions, but typically five years.</p> <p>21 Q. In the University of Montevallo case, did</p> <p>22 you give a deposition?</p> <p>23 A. Yes, I did.</p>
<p style="text-align: right;">Page 34</p> <p>1 another corporate name, but I don't recall it at</p> <p>2 the moment. I'm sorry.</p> <p>3 Q. And was Alabama Wood Treating accused of</p> <p>4 polluting the property that was at issue in the</p> <p>5 case?</p> <p>6 A. It was alleged they were one of the</p> <p>7 responsible parties for creosote contamination.</p> <p>8 Q. What was the outcome of the case?</p> <p>9 A. I believe it settled.</p> <p>10 Q. In the University of Montevallo case, what</p> <p>11 year or years did you work on that one?</p> <p>12 A. Late 1990s.</p> <p>13 MR. DAVIS: Are you sure about that?</p> <p>14 THE WITNESS: No, I'm not, to be honest.</p> <p>15 MR. DAVIS: Can I help on the date?</p> <p>16 MR. BROCK: Sure.</p> <p>17 MR. DAVIS: That case tried in 2006.</p> <p>18 THE WITNESS: Oh, wow.</p> <p>19 A. If I may refer to this, I believe there's</p> <p>20 some information on that.</p> <p>21 Q. Yes, I was looking for that. In Section 7,</p> <p>22 there's some prior litigation, but I think it</p> <p>23 only goes back a few years. I don't think it</p>	<p style="text-align: right;">Page 36</p> <p>1 Q. Did you do an expert report?</p> <p>2 A. Yes, I did.</p> <p>3 Q. And did the case go to trial?</p> <p>4 A. It did.</p> <p>5 Q. Did you testify at trial?</p> <p>6 A. I did.</p> <p>7 Q. Was it in state court or federal?</p> <p>8 A. I don't know.</p> <p>9 Q. Was it in Shelby County?</p> <p>10 A. Yes.</p> <p>11 Q. And generally, what was the nature of your</p> <p>12 expert opinion in that case?</p> <p>13 A. That a proposed mining operation would</p> <p>14 irreparably harm the waterways in Ebenezer</p> <p>15 Spring, which was part of Ebenezer Preserve,</p> <p>16 property belonging to the University of</p> <p>17 Montevallo.</p> <p>18 Q. Were you retained by Starnes?</p> <p>19 A. I worked with --</p> <p>20 Q. Was it a different law firm?</p> <p>21 A. It may be, yes.</p> <p>22 Q. That's fine if you don't remember the name</p> <p>23 of the firm. Did Mr. Davis work at the firm?</p>

<p style="text-align: right;">Page 37</p> <p>1 A. Yes.</p> <p>2 Q. And you worked with him on that case?</p> <p>3 A. I did.</p> <p>4 Q. The Woods Knoll case is the first one</p> <p>5 listed here, and it indicates you gave a</p> <p>6 deposition and courtroom testimony in that case,</p> <p>7 right?</p> <p>8 A. That's correct.</p> <p>9 Q. And what was the general nature of your</p> <p>10 opinion that you rendered in that case?</p> <p>11 A. That the activities of the City of Lincoln</p> <p>12 did not cause sedimentation or water runoff</p> <p>13 damages to the adjoining property, Woods Knoll.</p> <p>14 Q. Do you have copies of these depositions?</p> <p>15 A. I may. I may have electronic copies.</p> <p>16 Q. Specifically, the Woods Knoll deposition?</p> <p>17 A. I'm not sure about that one, 2011.</p> <p>18 Q. Do you have a copy of your deposition in</p> <p>19 the University of Montevallo case?</p> <p>20 A. I'm not sure about that. We've moved</p> <p>21 several times, and archives have been purged for</p> <p>22 older projects. We may have electronic copies.</p> <p>23 Q. Do you keep copies of your expert reports</p>	<p style="text-align: right;">Page 39</p> <p>1 Q. What was the nature of your opinion in that</p> <p>2 case?</p> <p>3 A. Soil and groundwater contamination and</p> <p>4 vapors that the church was experiencing on their</p> <p>5 property were attributed to the adjacent tank</p> <p>6 farm and their pipeline.</p> <p>7 Q. And did you conclude in that case that</p> <p>8 there was contamination?</p> <p>9 A. Yes.</p> <p>10 Q. What was the outcome of that case?</p> <p>11 A. I believe that one settled.</p> <p>12 Q. And the next item, Skelton, were you</p> <p>13 retained by the plaintiff or defendant?</p> <p>14 A. The defendant.</p> <p>15 Q. And what was the general nature of your</p> <p>16 testimony?</p> <p>17 A. That the defendant, Mr. Cunningham, the</p> <p>18 activities on his property adjacent to the</p> <p>19 Warrior River were not causing adverse erosion</p> <p>20 effects to his neighboring property.</p> <p>21 Q. What activity was he engaged in?</p> <p>22 A. It was a private residence.</p> <p>23 Q. Was he just clearing it to build it?</p>
<p style="text-align: right;">Page 38</p> <p>1 in a particular place?</p> <p>2 A. I do.</p> <p>3 Q. Do you have expert reports for all of the</p> <p>4 cases that are listed on page 11 of your report</p> <p>5 in this case?</p> <p>6 A. Yes, I believe I do.</p> <p>7 Q. In the second item on this list, the Rodger</p> <p>8 Morrison versus Harvest Monrovia case, can you</p> <p>9 tell us what generally your opinion that you</p> <p>10 rendered was in that case?</p> <p>11 A. Yes, I can. The Harvest Monrovia and Fire</p> <p>12 Protection Authority is also the public water</p> <p>13 supply of the Harvest Monrovia area. They're</p> <p>14 pumping out of a Karst aquifer, and the opinion</p> <p>15 was that the withdrawal of the groundwater from</p> <p>16 the formation was not having an impact on the</p> <p>17 property of Rodger Morrison.</p> <p>18 Q. So were you retained by the defendant in</p> <p>19 the case, or a defendant?</p> <p>20 A. The defendant, yes.</p> <p>21 Q. In the next listed case, Mount Canaan, were</p> <p>22 you retained by the plaintiff or the defendant?</p> <p>23 A. The plaintiff.</p>	<p style="text-align: right;">Page 40</p> <p>1 A. He had cleared it, built, and maintained</p> <p>2 it.</p> <p>3 Q. With regard to that case, you indicate "did</p> <p>4 a technical report." Is that something different</p> <p>5 than an expert report, or is that just another</p> <p>6 terminology for an expert report?</p> <p>7 A. It's just another term for an expert</p> <p>8 report.</p> <p>9 Q. In the City of Hattiesburg case, were you</p> <p>10 retained by the defendant or the plaintiff?</p> <p>11 A. Plaintiff.</p> <p>12 Q. And you did a report and a deposition,</p> <p>13 right?</p> <p>14 A. Yes, sir.</p> <p>15 Q. But no trial testimony?</p> <p>16 A. No, sir.</p> <p>17 Q. What was the nature of your opinion in the</p> <p>18 Hattiesburg case?</p> <p>19 A. The case was related to the historical use</p> <p>20 and current ongoing activities of remediation at</p> <p>21 the Hercules site in the outskirts of</p> <p>22 Hattiesburg. My opinion related to certain areas</p> <p>23 of the site that had not had attention, needed</p>

<p style="text-align: right;">Page 41</p> <p>1 further attention, and I developed cost estimates 2 for potential remedial activities associated with 3 that. 4 Q. What sort of facility is Hercules? 5 A. They produced a wide range of different 6 chemicals at that facility, pesticides and other 7 organic constituents that I don't recall the list 8 of the names of the constituents. 9 Q. Did you give an opinion about the existence 10 of the contamination, or just the costs 11 associated with remediation? 12 A. My opinion did include the existence of 13 contamination. 14 Q. Did the estimate for remediation include 15 any excavation of soil or other material? 16 A. Yes, it did, at specific areas on-site. 17 Q. What other components did the remedial cost 18 estimate include? 19 A. Continued recovery of DNPL, Dense 20 Non-aqueous Phase Liquids; groundwater treatment; 21 closure of the site. 22 Q. And what was the resolution of that case, 23 if you know?</p>	<p style="text-align: right;">Page 43</p> <p>1 A. By the plaintiff. 2 Q. What was the nature of your testimony in 3 that case? 4 A. The Village of Sauk Village was 5 experiencing groundwater contamination in their 6 public water supply, and it was my opinion that 7 it was likely that the Roadway Express was the 8 source of the contamination. 9 Q. What is Roadway Express? 10 A. At this location of Sauk Village, it was a 11 significantly large trucking transfer location. 12 Q. I recall in that case, if I'm correct, that 13 part of the defense was that there were some 14 landfills that were responsible for the 15 contamination. Is that the right case? 16 A. Yes. Yes. 17 Q. And what was the ultimate outcome of that 18 case, if you know? 19 A. The jury found for Roadway. 20 Q. And you testified at trial in 2017? 21 A. I did. 22 Q. Was this the first case that you had worked 23 on in the state of Illinois?</p>
<p style="text-align: right;">Page 42</p> <p>1 A. It was settled. 2 Q. Is the facility still in operation? 3 A. The remediation, I believe, is still 4 ongoing. The facility has been closed for quite 5 some time. 6 Q. This case was in Mississippi, according to 7 this document? 8 A. Yes, sir. 9 Q. Was this the first time that you had worked 10 in Mississippi? 11 A. No. 12 Q. You've had other cases where you gave 13 expert reports and testimony in Mississippi? 14 When I say "worked," I mean on a lawsuit in 15 litigation support, to clarify. 16 A. No, that was not the first time. 17 Q. The next case, Village of Sauk Village, it 18 says, and that was in Illinois, correct? 19 A. Yes, sir. 20 Q. Is that near Chicago? 21 A. Yes, it is. 22 Q. Were you retained by the plaintiff or the 23 defendant?</p>	<p style="text-align: right;">Page 44</p> <p>1 A. Yes. In Illinois, yes. 2 Q. Did you feel that you were qualified to 3 give an opinion in a lawsuit in the state of 4 Illinois? 5 A. Yes. 6 Q. Did the Court accept you as an expert in 7 that case? 8 A. Yes. 9 Q. Did the fact that it was the first time you 10 had worked in Illinois impede or impact your 11 opinion in any way? 12 A. No, sir. 13 Q. And the last case, the first plaintiff is 14 Janice Potter. Were you retained by the 15 plaintiff or defendant in that case? 16 A. Plaintiffs. 17 Q. It looks like you did a report and a 18 deposition, correct? 19 A. Yes. 20 Q. What was the nature of your testimony in 21 that case? 22 A. The case had to do with the application of 23 pesticides at individual properties and a nearby</p>

<p style="text-align: right;">Page 45</p> <p>1 country club.</p> <p>2 Q. This was in the state of Florida; is that</p> <p>3 correct?</p> <p>4 A. Yes.</p> <p>5 Q. Is this case ongoing?</p> <p>6 A. I did testify in court also.</p> <p>7 Q. Okay. So it might be updated?</p> <p>8 A. That would be on the updated.</p> <p>9 (Whereupon, Plaintiff's Exhibit Number 8</p> <p>10 was marked for identification, a copy of which is</p> <p>11 attached to the original of the transcript.)</p> <p>12 Q. Let me go ahead and hand you what's Exhibit</p> <p>13 8, which Mr. Davis gave me this morning, which I</p> <p>14 understand is an updated version of this previous</p> <p>15 case listing. Is that accurate?</p> <p>16 A. Yes.</p> <p>17 Q. And I see it has some additional</p> <p>18 information about the Potter case that indicates</p> <p>19 you testified at trial in February of this year;</p> <p>20 is that correct?</p> <p>21 A. Yes, sir.</p> <p>22 Q. Has there been a verdict in that case?</p> <p>23 A. The trial -- yes, there has. The trial was</p>	<p style="text-align: right;">Page 47</p> <p>1 attempted to offer in those cases?</p> <p>2 A. No, sir.</p> <p>3 Q. Have you ever had an instance where your</p> <p>4 testimony was excluded?</p> <p>5 A. No, I haven't.</p> <p>6 Q. Have you ever had an instance where a court</p> <p>7 declined to recognize you as an expert in the</p> <p>8 case?</p> <p>9 A. No.</p> <p>10 Q. If you would turn to page 9 in your report,</p> <p>11 please.</p> <p>12 A. (Witness complies.)</p> <p>13 Q. This section is titled Qualifications. Do</p> <p>14 you see that?</p> <p>15 A. I do.</p> <p>16 Q. And did you draft this?</p> <p>17 A. I did.</p> <p>18 Q. In the last paragraph of this description</p> <p>19 of your qualifications, it mentions that you have</p> <p>20 done coal market studies?</p> <p>21 A. Yes.</p> <p>22 Q. Can you tell us what that is?</p> <p>23 A. Yes. We were retained several years in a</p>
<p style="text-align: right;">Page 46</p> <p>1 for class certification, and it was denied.</p> <p>2 Q. Did you testify about class certification?</p> <p>3 A. I testified about the hydrogeologic setting</p> <p>4 and contamination of the proposed class area.</p> <p>5 Q. Is the case still going on, even though</p> <p>6 they didn't get class certification, or has it</p> <p>7 ended, or do you know?</p> <p>8 A. I'm not certain.</p> <p>9 Q. So my review of these two documents, it</p> <p>10 looks like that additional information about the</p> <p>11 Potter case is there, and there's another --</p> <p>12 wait. It looks like all the other cases are the</p> <p>13 same; is that correct?</p> <p>14 A. Yes, sir, that's correct.</p> <p>15 Q. If I'm missing any additional information</p> <p>16 on here, let me know. All I see is the</p> <p>17 information at the end of the description of the</p> <p>18 Potter case.</p> <p>19 A. Yes, that was added to update it, since</p> <p>20 that occurred after preparing the expert report.</p> <p>21 Q. Okay, I understand. Thank you.</p> <p>22 Ms. George, in any of the cases listed in Section</p> <p>23 7, was any of your testimony excluded that you</p>	<p style="text-align: right;">Page 48</p> <p>1 row, and ultimately for use by the Public Service</p> <p>2 Commission. I will talk about this one, since it</p> <p>3 is public information.</p> <p>4 Q. Let me stop you, though. The Public</p> <p>5 Service Commission of Alabama?</p> <p>6 A. Yes, sir.</p> <p>7 Q. Okay, go ahead.</p> <p>8 A. We put together a report based on</p> <p>9 interviews of, as I recall, surface mining</p> <p>10 operators and underground mining operators, and</p> <p>11 got information about how much they were mining.</p> <p>12 And it focused mostly on their cost of money and</p> <p>13 their sales cost for either long-term or</p> <p>14 short-term contracts that they had with their</p> <p>15 customers. I believe the Public Service</p> <p>16 Commission used it for aspects of looking at the</p> <p>17 Alabama Power Company.</p> <p>18 Q. Is there a written report or series of</p> <p>19 reports that came out of that work?</p> <p>20 A. There were, but I don't believe we have</p> <p>21 record of them anymore.</p> <p>22 Q. What years are we talking about here?</p> <p>23 A. Right around 1980, or '79 to '82 or '83,</p>

<p style="text-align: right;">Page 49</p> <p>1 something like that.</p> <p>2 Q. If I understood your testimony correctly,</p> <p>3 the Public Service Commission retained and</p> <p>4 compensated PELA for this work?</p> <p>5 A. I'm not sure if it was the Public Service</p> <p>6 Commission or Alabama Power Company.</p> <p>7 Q. It's kind of hard to tell the difference</p> <p>8 sometimes, isn't it?</p> <p>9 A. It might have been why we were doing it. I</p> <p>10 don't know.</p> <p>11 Q. Ms. George, if you need to take a break at</p> <p>12 any time, I should have told you that, you</p> <p>13 probably know that, you've done a lot of</p> <p>14 depositions; but if at any time you need to take</p> <p>15 a break, just let me know.</p> <p>16 A. Thank you. We're good.</p> <p>17 Q. In the Qualifications section, you also</p> <p>18 mention that you were a member of ADEM's</p> <p>19 Groundwater Program Advisory Committee. Can you</p> <p>20 tell me what that work entailed?</p> <p>21 A. Yes. There was a committee of</p> <p>22 professionals, engineers and geologists,</p> <p>23 environmental scientists that was pulled together</p>	<p style="text-align: right;">Page 51</p> <p>1 programs for other types of properties besides</p> <p>2 underground storage tanks. And this, again, was</p> <p>3 a committee group that was led by an ADEM</p> <p>4 consultant that ultimately has put together a</p> <p>5 computer program that many, many consultants and</p> <p>6 states use for calculating or determining risk.</p> <p>7 Q. Who is the consultant?</p> <p>8 A. It's called the RAM Group out of Texas.</p> <p>9 Q. R-A-M?</p> <p>10 A. Yes, sir. It's an acronym. I don't recall</p> <p>11 what their --</p> <p>12 Q. What is the software program called?</p> <p>13 A. RAM Version 4 right now.</p> <p>14 Q. And what is it used to assess the risk of?</p> <p>15 A. The risk of exposure from all the chemicals</p> <p>16 that are listed on the regional screening level</p> <p>17 list put out by EPA every six months, and it's</p> <p>18 also used as a forward calculation to determine</p> <p>19 potential clean-up levels of those constituents</p> <p>20 also.</p> <p>21 Q. Do you use that software in your work?</p> <p>22 A. Yes, on some projects. I don't personally,</p> <p>23 our firm does.</p>
<p style="text-align: right;">Page 50</p> <p>1 by, I believe it was Sonya Massey or Whitt Slagle</p> <p>2 at ADEM in the groundwater division. We met on</p> <p>3 numerous occasions regarding their current and</p> <p>4 potential revisions of their program aspects.</p> <p>5 Q. What years was that?</p> <p>6 A. Early 1990s.</p> <p>7 Q. Did that committee sponsor any particular</p> <p>8 administrative or legislative initiatives or</p> <p>9 action?</p> <p>10 A. Not that I recall that specifically came</p> <p>11 out of the committee. I think it was more</p> <p>12 advisement to the internal operations.</p> <p>13 Q. At ADEM? The internal operations at ADEM?</p> <p>14 A. At ADEM, the groundwater branch.</p> <p>15 Q. You also list the risk-based corrective</p> <p>16 action or RBCA work group. Can you tell me what</p> <p>17 that is or was?</p> <p>18 A. Yes. It is defunct now, but this also was</p> <p>19 in probably the early 2000s. The Underground</p> <p>20 Storage Tank Program had already established a</p> <p>21 risk-based corrective action program or system,</p> <p>22 and ADEM and many other states at the time were</p> <p>23 looking at how to put together their risk</p>	<p style="text-align: right;">Page 52</p> <p>1 Q. Has it been used on the Maxine project?</p> <p>2 A. No, sir.</p> <p>3 Q. Would it be applicable?</p> <p>4 A. No, sir.</p> <p>5 Q. Coming back to the References section on</p> <p>6 page 12 of your report, if you could turn to that</p> <p>7 page, please.</p> <p>8 A. (Witness complies.)</p> <p>9 Q. On the items that have the Drummond Bates</p> <p>10 stamp numbers, were those individual documents</p> <p>11 provided to you, or did you cull those documents</p> <p>12 out of a larger set of Drummond documents?</p> <p>13 A. I'm sorry, I misspoke when I answered your</p> <p>14 question earlier. I believe that I used these on</p> <p>15 the basis of reviewing the appendices of</p> <p>16 Mr. Brown's report.</p> <p>17 Q. Okay. So if I'm understanding you --</p> <p>18 A. So I did cull them from a compendium of</p> <p>19 documents.</p> <p>20 Q. Just to make sure I understand, attached to</p> <p>21 Mr. Brown's report was a stack of Drummond</p> <p>22 Bates-stamped documents, right?</p> <p>23 A. That's correct.</p>

<p style="text-align: right;">Page 53</p> <p>1 Q. And you looked at those?</p> <p>2 A. Yes.</p> <p>3 Q. Are you saying that all of the documents</p> <p>4 listed in your reference list came out of that</p> <p>5 group of documents that were attached to Mr.</p> <p>6 Brown's report?</p> <p>7 A. I believe so, yes.</p> <p>8 Q. And the reason I ask is, in this case in</p> <p>9 the document production, we're up to about 4,000</p> <p>10 pages of documents. I just didn't know if you</p> <p>11 went through all of the Drummond document</p> <p>12 production to cull down to these documents, or</p> <p>13 not. Did you do that?</p> <p>14 A. I did not, not at this time of preparation</p> <p>15 of the expert report.</p> <p>16 Q. So your testimony today is, you believe all</p> <p>17 of these Drummond documents came from Brown's</p> <p>18 report?</p> <p>19 A. Yes, sir.</p> <p>20 Q. If you would, please turn to page 10 of</p> <p>21 your report titled Compensation. Are you with</p> <p>22 me?</p> <p>23 A. Yes, sir.</p>	<p style="text-align: right;">Page 55</p> <p>1 been retained to do in this case?</p> <p>2 A. To view documents and provide</p> <p>3 interpretation and expert opinion, and also</p> <p>4 provide information and review about our historic</p> <p>5 project. Projects, excuse me.</p> <p>6 MR. DAVIS: I'm sorry. If it helps, I've</p> <p>7 said this before, I'm happy to produce every</p> <p>8 engagement letter with any of our consultants, as</p> <p>9 long as there's reciprocity.</p> <p>10 MR. BROCK: Okay, we can talk about that.</p> <p>11 I was just going to ask those questions and</p> <p>12 see --</p> <p>13 MR. DAVIS: That's fine. I just wanted to</p> <p>14 make sure that you understood I'm happy to give</p> <p>15 them to you.</p> <p>16 Q. Are all of the opinions that you have</p> <p>17 developed pursuant to that retention by defense</p> <p>18 counsel in this case, set forth in the two</p> <p>19 reports that you've submitted?</p> <p>20 A. Yes.</p> <p>21 Q. And you've done a lot of expert reports,</p> <p>22 and you understand the way the process works, is</p> <p>23 that the rules require you to set forth your</p>
<p style="text-align: right;">Page 54</p> <p>1 Q. Are the rates shown here what you are</p> <p>2 billing the Starnes firm for work in this case?</p> <p>3 A. Yes, sir.</p> <p>4 Q. Do you have a written retainer agreement</p> <p>5 with the Starnes firm?</p> <p>6 A. I believe so, yes.</p> <p>7 Q. Is it a contract-type document or a letter?</p> <p>8 A. Just a letter.</p> <p>9 Q. Did you counter-sign it and accept the</p> <p>10 terms as are set out in the letter, or what does</p> <p>11 the document look like? How is it formatted?</p> <p>12 A. I'm not sure. Just a brief letter.</p> <p>13 Q. Does it set out a scope of work for PELA in</p> <p>14 this case?</p> <p>15 A. No, sir.</p> <p>16 Q. Does it describe what it is that PELA has</p> <p>17 been retained to do?</p> <p>18 A. No, sir.</p> <p>19 Q. Other than the hourly rate, does it have</p> <p>20 any instruction about the work PELA is supposed</p> <p>21 to do or not do in the case?</p> <p>22 A. No.</p> <p>23 Q. What is your understanding of what PELA has</p>	<p style="text-align: right;">Page 56</p> <p>1 opinions in writing in the report, right?</p> <p>2 A. Yes.</p> <p>3 Q. And you've done so?</p> <p>4 A. Yes.</p> <p>5 Q. Have you submitted invoices for your work</p> <p>6 in the case?</p> <p>7 A. Yes.</p> <p>8 Q. And are those based on your hourly rate</p> <p>9 times the number of hours you've worked?</p> <p>10 A. Yes, and it would also include support</p> <p>11 staff and expenses.</p> <p>12 Q. What support staff have been involved in</p> <p>13 this case?</p> <p>14 A. Primarily, the word processor.</p> <p>15 Q. No technical staff?</p> <p>16 A. Yes. A limited number of hours, yes.</p> <p>17 Q. Who would that be?</p> <p>18 A. Dan Green.</p> <p>19 Q. What work did he perform?</p> <p>20 A. He pulled some reference documents for me</p> <p>21 and also just discussion of some of the aspects</p> <p>22 of Mr. Brown's volumetrics. I believe that's</p> <p>23 all.</p>

<p style="text-align: right;">Page 57</p> <p>1 Q. What is Mr. Green's area of expertise?</p> <p>2 A. He's a geologist. He's our chief of</p> <p>3 operations.</p> <p>4 Q. Through the date of today's deposition, how</p> <p>5 many hours has PELA billed for its work on this</p> <p>6 case?</p> <p>7 A. I don't know.</p> <p>8 Q. Have you seen bills that contain the number</p> <p>9 of hours?</p> <p>10 A. I have.</p> <p>11 Q. Do you have any reasonable estimate you can</p> <p>12 provide?</p> <p>13 A. No. No, I don't.</p> <p>14 Q. Do you know how many hours were invoiced</p> <p>15 for preparation of your first report?</p> <p>16 A. Not without looking, no, I don't.</p> <p>17 Q. Do you have any estimate?</p> <p>18 A. It certainly would be just an estimate. 60</p> <p>19 hours, 40 hours, somewhere in that realm.</p> <p>20 Q. What about with regard to your rebuttal</p> <p>21 report, what would your best estimate be of how</p> <p>22 many hours PELA had invested in that?</p> <p>23 A. I'd really rather not just give a</p>	<p style="text-align: right;">Page 59</p> <p>1 Q. How recently was that?</p> <p>2 A. It was on June 7th.</p> <p>3 Q. Of this year?</p> <p>4 A. Yes, sir.</p> <p>5 Q. Who accompanied you on that trip?</p> <p>6 A. Mr. Davis; Leslie Noble; an associate with</p> <p>7 Mr. Davis's firm; and Tom Simpson. There was one</p> <p>8 other person. Her name will come to me and I'll</p> <p>9 give it to you later, if I may.</p> <p>10 Q. Who was she affiliated with?</p> <p>11 A. I believe she's with Tuscaloosa Testing, or</p> <p>12 retired, I'm not positive.</p> <p>13 Q. Generally, what all did you view when you</p> <p>14 made that site visit on June 7th?</p> <p>15 A. What I would refer to would be the upper</p> <p>16 pond and the lower pond; the basin that was</p> <p>17 constructed as part of the drainage ditch system</p> <p>18 in the 1980s; portions of the drainage ditch</p> <p>19 system, the cross-over; and the pine forest that</p> <p>20 occupies the majority of the rock disposal area</p> <p>21 now.</p> <p>22 Q. Did you do this on foot?</p> <p>23 A. Yes, sir.</p>
<p style="text-align: right;">Page 58</p> <p>1 guesstimate at this time.</p> <p>2 Q. Yes, I don't want you to make a wild guess,</p> <p>3 but if you have a reasonable estimate --</p> <p>4 A. I don't.</p> <p>5 Q. At the time you prepared your initial</p> <p>6 report, the date on the front, it was submitted</p> <p>7 November 17, 2017 --</p> <p>8 A. Yes, sir.</p> <p>9 Q. -- had you made a visit to the Maxine Mine</p> <p>10 site?</p> <p>11 A. Not recently, no.</p> <p>12 Q. As of the date you submitted this report in</p> <p>13 2017, what was the most recent trip to the mine</p> <p>14 site that you had made?</p> <p>15 A. Likely in the mid '80s.</p> <p>16 Q. Same question with the rebuttal report, did</p> <p>17 you make a visit to the mine between the time you</p> <p>18 submitted the first report and the rebuttal</p> <p>19 report?</p> <p>20 A. No, I did not.</p> <p>21 Q. Have you recently made a visit to the mine</p> <p>22 site?</p> <p>23 A. Yes, I have.</p>	<p style="text-align: right;">Page 60</p> <p>1 Q. Did you go in by vehicle or boat?</p> <p>2 A. Vehicle.</p> <p>3 Q. Did you keep any field notes from that</p> <p>4 visit?</p> <p>5 A. No, I did not.</p> <p>6 Q. Did you take any photographs?</p> <p>7 A. I did take photographs, some.</p> <p>8 Q. It's a little bit out of order, I</p> <p>9 apologize. I try to be organized and mark them</p> <p>10 in advance, and I should have known better,</p> <p>11 because I never stay in the same order.</p> <p>12 (Whereupon, Plaintiff's Exhibit Number 3</p> <p>13 was marked for identification, a copy of which is</p> <p>14 attached to the original of the transcript.)</p> <p>15 Q. Let me show you what I've marked Exhibit 3,</p> <p>16 which is a stack of photographs that Mr. Davis</p> <p>17 has produced to us. For the record, these are</p> <p>18 stamped PELA 27 through 59.</p> <p>19 A. Yes, sir.</p> <p>20 Q. Are these photos that you took on the mine</p> <p>21 site visit on June 7th?</p> <p>22 A. I haven't looked at each and every one,</p> <p>23 but, yes, they do look like it.</p>

<p style="text-align: right;">Page 61</p> <p>1 Q. Take your time and do that. We just need 2 to be accurate for the record, make sure we 3 didn't sneak one in there on you. 4 A. Okay. (Witness complies.) 5 (Whereupon, at this time a short break 6 was taken.) 7 Q. Ms. George, did you have an opportunity to 8 look at those photographs? 9 A. I did. If I may, I told you if I 10 remembered the other individual's name, I would 11 bring it to your attention. It's Cindy 12 House-Pearson. I remembered it before I got 13 outside of your door. 14 Q. And she was with who? 15 A. I believe she's with TTL or she has 16 retired. I'm not positive. 17 Q. And that's the testing lab in Tuscaloosa? 18 A. Yes, they do have a component that's a 19 testing lab. 20 Q. Let's talk a little bit about some of these 21 photos. Did you take these yourself? 22 A. I did. 23 Q. On the first one, number 27, what do you</p>	<p style="text-align: right;">Page 63</p> <p>1 (Whereupon, Plaintiff's Exhibit Number 6 2 was marked for identification, a copy of which is 3 attached to the original of the transcript.) 4 Q. I'm going to go ahead and show you this 5 exhibit, too, Plaintiff's Exhibit 6, because we 6 might want to refer to it going through these 7 photographs. 8 A. Yes, sir. 9 Q. Have you seen this figure before? 10 A. Yes, I have. 11 Q. Did you prepare this? 12 A. Yes, I did. 13 Q. Do you know the year that this was 14 prepared? Because I don't see a year on it. 15 A. I can't give you a specific date, because I 16 believe it was used in a number of progress 17 reports, and it would be in the early '80s, '82, 18 '83, to the best of my recollection. 19 Q. That seems to be everybody's best 20 recollection, but I just thought maybe because 21 you're the author of it, you might have a more 22 precise recollection. I mean, I know it was a 23 long time ago.</p>
<p style="text-align: right;">Page 62</p> <p>1 refer to that area as? It's been called in this 2 case the lower sediment basin and the alluvial 3 fan and some other things. How do you refer to 4 it? 5 A. The lower pine. 6 Q. And is this the area just upgradient of the 7 lower dam? 8 A. Yes, it is. 9 Q. And by "lower dam," I mean the one that is 10 closest to the Locust Fork? 11 A. Yes. 12 Q. What is the material that we see on the 13 ground there in that first photo, number 27? 14 A. Primarily eroded shale. 15 Q. Eroded shale? 16 A. Uh-huh. Shale is the siltstone. 17 Q. What is the origin of that material? 18 A. The origin would be from the refuse rock 19 and also from the natural bedrock. 20 Q. How much of it, if you could attribute, 21 would be to the rock refuse pile? 22 A. I have not made an estimate, but the 23 majority of it probably is from the refuse pile.</p>	<p style="text-align: right;">Page 64</p> <p>1 A. It was a long time ago. 2 Q. Do the best you can do, that's all we can 3 ask. If you don't mind, just so we can identify 4 these things, I'm going to hand you this red pen; 5 and if you would on Exhibit 6, can you write on 6 this one the number 27 where this photo, the area 7 that the photo depicts? 8 A. Well, the number wouldn't really be 9 representative of the entire area, but I'll put 10 the number in the middle of the area. 11 Q. Okay, thank you. When you said that the 12 material, the majority came from the rock refuse, 13 what did you refer to it as, rock refuse pile? 14 A. I think I called it refuse material. 15 Q. Because we have got a lot of different 16 terminology for some of these piles. Are you 17 familiar with the terms pre-law and post law? 18 A. Yes. 19 Q. Is that terminology that you all used when 20 you were working on the site in the '80s? 21 A. Yes. 22 Q. If you would, can you tell us which area on 23 Exhibit 6 would comprise the, [quote], "pre-law"</p>

<p style="text-align: right;">Page 65</p> <p>1 refuse area?</p> <p>2 A. The lighter stippled area would be the</p> <p>3 pre-law area.</p> <p>4 Q. If you would, would you write up at the top</p> <p>5 "pre-law" in that area?</p> <p>6 A. It is also in the explanation.</p> <p>7 Q. Okay, I understand.</p> <p>8 A. (Witness complies.) And if I may, draw an</p> <p>9 arrow to the explanation.</p> <p>10 Q. That would be fine.</p> <p>11 A. (Witness complies.)</p> <p>12 Q. And the other area that's a darker shade</p> <p>13 that looks like, when you're looking at this</p> <p>14 exhibit to the left, which I guess would be the</p> <p>15 west, what do you refer to that area as?</p> <p>16 A. This would be the capped area or the post</p> <p>17 law area.</p> <p>18 Q. Is the material in the post law area</p> <p>19 different than the material in the pre-law area?</p> <p>20 A. Yes and no, yes in the fact that it does</p> <p>21 have a clay cover placed upon it after the</p> <p>22 completion of the refuse placement. It may have</p> <p>23 a somewhat different composition than parts of</p>	<p style="text-align: right;">Page 67</p> <p>1 A. Yes, as opposed to the fines that are more</p> <p>2 of a slurry and are deposited in different areas.</p> <p>3 Q. Is it appropriate to refer to it as mine</p> <p>4 waste?</p> <p>5 MR. DAVIS: Object to form. You can</p> <p>6 answer.</p> <p>7 A. I'm just not familiar with calling it that.</p> <p>8 Q. Okay. Is the material in the pond that we</p> <p>9 see in photograph 27, did that come from the</p> <p>10 pre-law or the post law waste area?</p> <p>11 A. Are you referring to the surface of it or</p> <p>12 the entirety of it?</p> <p>13 Q. The entirety of it.</p> <p>14 A. It could come from both.</p> <p>15 Q. Have you performed any sampling or analysis</p> <p>16 on your own to try to determine the origin of the</p> <p>17 material we see there in that pond?</p> <p>18 A. Recently or historically?</p> <p>19 Q. Ever.</p> <p>20 A. I don't believe that was a specific task at</p> <p>21 the time.</p> <p>22 Q. If you would turn to page 29 in that</p> <p>23 exhibit, tell us what is depicted in that photo.</p>
<p style="text-align: right;">Page 66</p> <p>1 the pre-law area, because the washing of the coal</p> <p>2 may have changed over time.</p> <p>3 Q. How would the coal wash-aways possibly be</p> <p>4 different than the material in the pre-law pile?</p> <p>5 A. The amount of coal could be less, coal</p> <p>6 fines, coal dust.</p> <p>7 Q. Let me stop you. It could be less in which</p> <p>8 section?</p> <p>9 A. It could be less in the post law because of</p> <p>10 increased sufficiency in recovering coal.</p> <p>11 Q. The material in the pre-law refuse area,</p> <p>12 I'm going to refer to it that way because that's</p> <p>13 what it's called on this document, is that</p> <p>14 material the same as geologic overburden?</p> <p>15 A. I've never used that term for refuse rock.</p> <p>16 Geologic overburden, to me, is associated with</p> <p>17 surface mines, and it's the material that's the</p> <p>18 overburden that is removed above the coal that's</p> <p>19 placed in a spoil pile. It hasn't gone through a</p> <p>20 washing process, it's just transported. I always</p> <p>21 refer to washer rock, refuse.</p> <p>22 Q. Mr. Hicks referred to it as coarse refuse.</p> <p>23 Are you familiar with that terminology?</p>	<p style="text-align: right;">Page 68</p> <p>1 A. It's essentially the same area that's in</p> <p>2 photograph 27, it's just taken from a different</p> <p>3 angle.</p> <p>4 Q. On the right side of the photo, it appears</p> <p>5 that there's some surface water moving over the</p> <p>6 top of the sediment. Is that what that is?</p> <p>7 A. Yes, there was a trickle of drainage at the</p> <p>8 time we were there.</p> <p>9 Q. Was it raining that day?</p> <p>10 A. Not that day, no.</p> <p>11 Q. On the next page, page 30, is that a</p> <p>12 close-up shot of that same drainage that we saw</p> <p>13 in the prior photo?</p> <p>14 A. Yes, it is.</p> <p>15 Q. Is there any particular reason why you took</p> <p>16 this photo?</p> <p>17 A. No, not particular.</p> <p>18 Q. Turn to page 31, if you would, and tell us</p> <p>19 what's depicted in that photo.</p> <p>20 A. This is the -- I was standing on the lower</p> <p>21 dam looking towards the Locust Fork, and this is</p> <p>22 the coarse riprap comprising the dam, the exposed</p> <p>23 portion of it, anyway.</p>

<p style="text-align: right;">Page 69</p> <p>1 Q. Is that area what's referred to as the 2 spillway?</p> <p>3 MR. DAVIS: Object to the form. You can 4 answer.</p> <p>5 A. I'm not sure what to refer to it by name. 6 When we were working on the project, the drainage 7 from the lower pond was at the other side of the 8 pond; and there were some alterations or 9 additions or augmentations made to the dam that 10 changed its configuration, and I believe the 11 notch for the outlet was changed to the north 12 side of the dam.</p> <p>13 Q. Do you know about what year that happened?</p> <p>14 A. It would be somewhere around '83, '84, '85, 15 but I can't pinpoint the year.</p> <p>16 Q. But it was while you were working on the 17 project, on the Maxine site?</p> <p>18 A. It was either while we were working on it 19 or shortly after we completed our investigations.</p> <p>20 Q. Did PELA play any role in the design of 21 this notch, as you describe it, in the lower dam?</p> <p>22 A. No, sir.</p> <p>23 Q. Was that something PELA recommended to ABC?</p>	<p style="text-align: right;">Page 71</p> <p>1 filter?</p> <p>2 A. To allow water to leave the impoundment, 3 but the impoundment would serve its purpose as 4 being a sediment basin to catch the sediment.</p> <p>5 Q. Was the limestone filter when the discharge 6 was on the south end of the dam?</p> <p>7 A. No, sir, I don't believe so.</p> <p>8 Q. Is what we're looking at in this photo 31, 9 is that the limestone filter or part of it?</p> <p>10 A. It may be.</p> <p>11 Q. You're not sure?</p> <p>12 A. I'm not sure.</p> <p>13 Q. When you were on the site, I know you 14 worked with a lot of ABC employees and engineers, 15 right?</p> <p>16 A. Yes, sir.</p> <p>17 Q. Did you ever work with anybody from 18 Drummond Company?</p> <p>19 A. No, sir.</p> <p>20 Q. With Mr. Hicks or anybody else?</p> <p>21 A. No, sir.</p> <p>22 Q. Was your work completed by 1984?</p> <p>23 A. '84, '85, yes.</p>
<p style="text-align: right;">Page 70</p> <p>1 A. No, I don't recall any specific 2 recommendations about engineering or design for 3 this feature or any of the other dams or 4 impoundments.</p> <p>5 Q. So to make sure I'm understanding your 6 testimony, this notch or discharge area when you 7 were there was on the downriver or south end of 8 the dam?</p> <p>9 A. Yes. It's where the drainage was.</p> <p>10 Q. Did it look like this was rock riprap, or 11 did it look different?</p> <p>12 A. I think it looked different in several 13 different ways through the process of our 14 investigations. There were other times when 15 limestone riprap was applied to the dam.</p> <p>16 Q. We may look at this in some of the 17 documents, but there was a mention at times of a 18 limestone filter in the lower dam. Do you know 19 what that terminology refers to?</p> <p>20 A. Yes, sir, and I have looked at the design 21 documents that's included in the compendium of 22 documents, so I know what you're referring to.</p> <p>23 Q. What is the purpose of the limestone</p>	<p style="text-align: right;">Page 72</p> <p>1 Q. The next four photos, number 32 through 35, 2 seem to be highlighting a particular pine tree. 3 Can you explain to us the significance of those 4 photos, or why you took those photos?</p> <p>5 A. Yes. I was really quite astounded as to 6 the size of some of the trees from the vegetation 7 that had grown up over the entire site since I 8 was there last. I had looked at the site from 9 time to time in aerial photography, just out of 10 curiosity, and could see that it was forested for 11 the most part, but I hadn't been on the ground. 12 Really, I was surprised as to the amount of 13 forestry.</p> <p>14 Q. Could you show us by reference to Exhibit 15 6, where on the property this particular pine 16 tree is?</p> <p>17 A. I don't think so.</p> <p>18 Q. Do you have any idea at all, in terms of 19 the structures that are shown on that?</p> <p>20 A. I believe we were at some location between 21 the upper dam and, let's call it, the toe of the 22 post law area.</p> <p>23 Q. Would that be in the capped area?</p>

<p style="text-align: right;">Page 73</p> <p>1 A. No, I think we were below the capped area, 2 but I'm really not certain, because the terrain 3 was somewhat hummocky, but it was difficult to 4 really position where I was because of the line 5 of vision and the trees. I really couldn't tell 6 at some locations. 7 Q. Did your camera have any GPS coordinates -- 8 A. My camera? No. 9 Q. Was this taken with a camera or a phone? 10 A. Camera. 11 Q. So there is no GPS information to identify 12 where these photos are? 13 A. No. 14 Q. If you would turn to page 36, what is the 15 structure that we see in that photo? 16 A. This is layered bedrock of the Pottsville, 17 with a trickle of drainage, seepage. 18 Q. Where is the seepage coming from? 19 A. In this instance, it looked like it was 20 coming out from on top of one of the more 21 resistant layers of the Pottsville near the top 22 of the picture. 23 Q. Can you tell us where on the site this</p>	<p style="text-align: right;">Page 75</p> <p>1 A. Further northeast in that draw. 2 Q. Can you write 38 to approximate it? 3 A. (Witness complies.) 4 Q. The next three photos, 40, 41 and 42, look 5 like they have a boot in it and then a stream or 6 some flowing water, anyway. What are we looking 7 at in those pictures? 8 A. This is some of the Pottsville bedrock and 9 seepage, and what I was trying to capture was the 10 sheen that's on the water. It's indicative of 11 iron or iron bacteria in the water -- on the 12 water, excuse me. 13 Q. Am I understanding you to say that you 14 believe this seep is from the bedrock formation 15 as opposed to some other source on the site? 16 A. I think this is a different location. 17 Q. Well, I thought you just said a moment ago 18 that this related to the Pottsville formation? 19 A. Well, it does, but the Pottsville formation 20 is underneath the entire area, and it's exposed 21 at many different places. 22 Q. Throughout the documents there's -- and 23 we'll get into these -- a reference to an aquifer</p>
<p style="text-align: right;">Page 74</p> <p>1 photo was taken? 2 A. My recollection is that we were somewhere 3 in the vicinity of SW-1, maybe a little further 4 north and up in that valley. 5 Q. Well, if you can approximate where it was, 6 and I understand it's approximate, and write "36" 7 on it, I would appreciate it. 8 A. Okay. (Witness complies.) 9 Q. Is the next photo 37 part of that same 10 formation we were looking at in 36? 11 A. Yes, I believe so. 12 Q. Photos 38 and 39 also appear to be a 13 similar location, and there are some pine trees 14 in those photos. What were you capturing in 15 those two photos? 16 A. This is an area where the refuse rock is 17 now covered with the pine trees and a thick layer 18 of pine straw and other small trees growing up 19 through it. 20 Q. Where is this on the site? 21 A. I think we're still in proximity down in 22 the lower part. 23 Q. Close to where you wrote 36?</p>	<p style="text-align: right;">Page 76</p> <p>1 that was formed by the placement of the waste 2 material. Are you familiar with that? 3 A. Are you referring to PELA's documents? 4 Q. Yes. 5 A. Yes. 6 Q. Are you making a determination about 7 whether these seeps are from that aquifer or not 8 from that aquifer? 9 A. I hadn't made that determination; but, no, 10 I don't believe they are. The aquifer that was 11 referred to was in the hollow, to the best of my 12 recollection. 13 Q. Which would be where in reference to 14 Exhibit 6? 15 A. Between the lower dam at the right-hand 16 edge of the picture and to somewhere in the 17 vicinity of SW-3 or MO-3. 18 Q. And that's what you refer to as the hollow? 19 A. The hollow, the ravine, the valley. 20 Q. The tributary? 21 MR. DAVIS: Object to the form. 22 A. I don't think we ever called it a 23 tributary.</p>

<p style="text-align: right;">Page 77</p> <p>1 Q. PELA never called it a tributary?</p> <p>2 A. Dr. Lamoreaux may have referred to it as a</p> <p>3 tributary in some of his documents.</p> <p>4 Q. Photos 43, 44 and 45 appear to be the same</p> <p>5 general subject matter there. Can you tell us</p> <p>6 what we're looking at in those pictures?</p> <p>7 A. 43 is pretty blurry, so I would like to</p> <p>8 skip that one.</p> <p>9 Q. Yes, ma'am.</p> <p>10 A. This is a face along the western ditch</p> <p>11 where the runoff or the drainage is collected</p> <p>12 from the pre-law area, and we're looking at some</p> <p>13 of the pre-law area that's covered with trees.</p> <p>14 Q. Turn to photo 46, if you would.</p> <p>15 A. Yes, sir.</p> <p>16 Q. Is this the upper dam?</p> <p>17 A. I don't believe so. We were walking near</p> <p>18 and in the vicinity of what used to be the old</p> <p>19 road that came down between the pre-law and the</p> <p>20 post law area and the drainage, but I don't</p> <p>21 believe this is the dam.</p> <p>22 Q. So it's an area along where the road once</p> <p>23 existed between the pre- and the post law waste</p>	<p style="text-align: right;">Page 79</p> <p>1 Q. Where is that on the site?</p> <p>2 A. It is in the vicinity of what's labeled as</p> <p>3 the basin, and there's a small enlargement down</p> <p>4 in the lower left-hand corner of the diagram. It</p> <p>5 shows, in cartoon fashion, let me say --</p> <p>6 Q. Cartoon fashion, that's the same word our</p> <p>7 engineer used. Okay, go ahead.</p> <p>8 A. This is not a design drawing, obviously,</p> <p>9 but it was prepared to show the placement of the</p> <p>10 pipe relative to how the drainage system would</p> <p>11 work.</p> <p>12 Q. Well, what was the function of this pipe</p> <p>13 that we see in the photo?</p> <p>14 A. The pipe was to convey runoff from the post</p> <p>15 law area, that came down the west side of the</p> <p>16 post law area into the basin, and then that basin</p> <p>17 would drain out separate from pre-law, separate</p> <p>18 it from pre-law drainage.</p> <p>19 Q. Did that basin go all the way to the Locust</p> <p>20 Fork at the time this figure was prepared?</p> <p>21 A. The basin itself?</p> <p>22 Q. I'm sorry. Did the drainage channel that</p> <p>23 came out of the basin that's shown on this</p>
<p style="text-align: right;">Page 78</p> <p>1 areas?</p> <p>2 A. Yes, and it would be in the narrow, I</p> <p>3 believe in the narrow area of the valley.</p> <p>4 Q. Can you mark 46?</p> <p>5 A. (Witness complies.) I think we were close</p> <p>6 to where the writing is for SW-3 and MO-3.</p> <p>7 Q. Okay, that's sufficient. So you were close</p> <p>8 to SW-3?</p> <p>9 A. Yes, I think so. Like I said earlier, it</p> <p>10 was starkly different and very difficult to</p> <p>11 determine precisely where we were.</p> <p>12 Q. Photos 48 through 51 appear to be in the</p> <p>13 same general area. Can you tell us where those</p> <p>14 are on the site?</p> <p>15 A. Yes, I believe we were somewhere between</p> <p>16 the location of MW-9 and SW-3, where the</p> <p>17 reclamation in the capped area had terracing.</p> <p>18 Q. And would that be the case for all four of</p> <p>19 these pictures?</p> <p>20 A. Yes.</p> <p>21 Q. Pictures 52 and 53, it looks like a pipe in</p> <p>22 those photos. Is that correct?</p> <p>23 A. Yes, it's corrugated culvert.</p>	<p style="text-align: right;">Page 80</p> <p>1 enlargement? Do you understand what I'm asking?</p> <p>2 A. Yes, sir, I do. I was trying to recall.</p> <p>3 Yes, I believe it did.</p> <p>4 Q. Photos 54 through 59 depict some concrete</p> <p>5 structures. Can you tell us what we're looking</p> <p>6 at there?</p> <p>7 A. Yes. This is what we refer to as the</p> <p>8 cross-over, and the approximate location is shown</p> <p>9 on whatever figure this is called, Exhibit 6,</p> <p>10 Figure 1. It was older reports. It's west of</p> <p>11 the post law area, and it's where the solid line</p> <p>12 and the dashed line cross each other.</p> <p>13 Q. If you would, can you just draw an arrow</p> <p>14 out from that and put the number of one of these</p> <p>15 photos?</p> <p>16 A. (Witness complies.)</p> <p>17 Q. What was the function or purpose of the</p> <p>18 cross-over?</p> <p>19 A. It was to prevent the commingling of the</p> <p>20 pre-law and the post law drainage from the west</p> <p>21 side of the rock disposal area.</p> <p>22 Q. Why was there an effort made to segregate</p> <p>23 the runoff from those two areas?</p>

<p style="text-align: right;">Page 81</p> <p>1 A. The purpose was to, I guess, be in 2 compliance with the regulations. 3 Q. What regulations? 4 A. The surface mining regulations, surface 5 mining control. 6 Q. Was that a determination that PELA made or 7 ABC made, or who made the determination that they 8 would be in compliance in some way by segregating 9 those waste streams? 10 A. My recollection and from reviewing some of 11 the documents is that it was a cooperative 12 planning process by ABC, with PELA's input, in 13 coordination with the Surface Mining Commission 14 and at the time the Water Improvement Commission 15 which transitioned into ADEM, the Alabama 16 Department of Environmental Management. 17 Q. What was PELA's contribution to that? 18 A. Recommendations, how and where, but we did 19 not design anything. 20 Q. Did PELA design any of the drainage 21 ditches? 22 A. No, we did not design. 23 Q. What sort of recommendations did you make,</p>	<p style="text-align: right;">Page 83</p> <p>1 Q. How recently was that? 2 A. 2003, 2004, possibly. 3 Q. How about Mr. Musick, have you had any 4 contact with him? 5 A. I have not. 6 (Whereupon, Plaintiff's Exhibit Number 7 7 was marked for identification, a copy of which is 8 attached to the original of the transcript.) 9 Q. Let me go ahead and show you another 10 document that I've marked as Exhibit 7 to your 11 deposition. It's another figure. Are you 12 familiar with that document? 13 A. Yes, I am. 14 Q. Did you prepare this? 15 A. I think so. 16 Q. It looks similar to Exhibit 6 in a lot of 17 ways. A lot of the same features are shown here, 18 correct? 19 A. Yes, the monitoring sites are shown; both 20 surface water and the wells; the locations of the 21 infiltration testing that we did is shown; arrows 22 that show general direction of drainage, runoff. 23 Q. We're going to come back to this in more</p>
<p style="text-align: right;">Page 82</p> <p>1 specifically? 2 A. Potential placement of the ditches, and 3 also the contouring of the post law area so that 4 it would drain into the ditch properly, and that 5 commingle in the other direction would be pre-law 6 drainage; again, no design. Recommendations in 7 writing and verbally while we were all on-site. 8 Q. Who did you work with primarily at ABC on 9 those issues? 10 A. There wasn't one individual. I think our 11 on-site activities were mostly with Tom Musick 12 and Jack McDuff. Other discussions, not 13 necessarily on-site recommendations would have 14 been to Doug Cook and Lawyer Edwards. 15 Q. Have you spoken to any of those people 16 about this lawsuit? 17 A. I have not. 18 Q. Have you spoken to any of them since 1984 19 or '5 when you left the site? 20 A. Yes. Jack McDuff was working for -- he 21 still may, he worked for Jefferson County, and we 22 acquired some aerial photography, I believe it 23 was, from his offices.</p>	<p style="text-align: right;">Page 84</p> <p>1 detail, but this drawing shows east ditch, west 2 ditch, north ditch, and parallel ditch. Do you 3 see all four of those? 4 A. Yes, I do. 5 Q. Were those ditches actually constructed and 6 put into operation on the site? 7 A. Yes. 8 Q. Were those all in existence when you left 9 the property in '84 or '85? 10 A. I believe so, yes. Yes. 11 Q. Are those all manmade ditches? 12 A. I think for the most part, with the 13 exception of the drainage that's shown from SW-2 14 or the basin, out towards the lower dam, that 15 does hug the natural topography, and you can see 16 the Pottsville exposed, so it drains along an 17 expression of the original hollow or topography 18 that was there; and in some places, it goes from 19 the drainage along the east ditch in the vicinity 20 of SW-3 and MO-3, which I think you can tell that 21 better on Exhibit 6, where the pattern on the 22 diagram indicates it's treed, it's forested. 23 Q. Let me try to deconstruct that a little</p>

<p style="text-align: right;">Page 85</p> <p>1 bit.</p> <p>2 A. Have I confused you?</p> <p>3 Q. No, it's fine. My question was about the</p> <p>4 four ditches that I listed, the one that's on</p> <p>5 Exhibit 7 that's designated north, east, west,</p> <p>6 and parallel. First, let me limit it to those</p> <p>7 four. Are those all manmade ditches?</p> <p>8 A. Yes.</p> <p>9 Q. Who were they constructed by?</p> <p>10 A. Either Alabama Byproducts or a contractor</p> <p>11 of theirs.</p> <p>12 Q. Did PELA supervise or direct the</p> <p>13 construction of those ditches in any way?</p> <p>14 A. No. We were on site and made observations,</p> <p>15 but we were not the supervisor of it.</p> <p>16 Q. Did you provide recommendations about the</p> <p>17 location of those ditches? By "you," I mean</p> <p>18 PELA.</p> <p>19 A. Yes, sir, I understood that. Not a</p> <p>20 specific location, but the fact that there would</p> <p>21 be two ditches to the west, and they needed to be</p> <p>22 segregated, and then there needed to be a means</p> <p>23 of settling-out any solids or sediment, so there</p>	<p style="text-align: right;">Page 87</p> <p>1 A. The hollow as mapped on the USGS topo maps</p> <p>2 is an intermittent or ephemeral stream.</p> <p>3 Q. Is it intermittent or ephemeral?</p> <p>4 A. By symbology, I guess USGS, would be an</p> <p>5 intermittent stream. The blue line that's shown</p> <p>6 on Exhibit 7, I guess it would be to the south of</p> <p>7 where that line would have been drawn on the map.</p> <p>8 Q. So you've seen the USGS map with the</p> <p>9 intermittent stream depicted on the Maxine site?</p> <p>10 A. Oh, yes, sir.</p> <p>11 Q. Can you show us with the red pen on Exhibit</p> <p>12 7, if it will show up, you said it would be --</p> <p>13 I'm sorry, did you say north or south of the blue</p> <p>14 line?</p> <p>15 A. I think I said north.</p> <p>16 Q. Can you show us with a line on there, the</p> <p>17 approximate path that you believe the tributary</p> <p>18 was depicted on USGS maps?</p> <p>19 A. Only to a certain extent.</p> <p>20 Q. Yes, I understand. This might work better,</p> <p>21 the blue pen.</p> <p>22 A. Blue? Could it get confused with the other</p> <p>23 blue line we're talking about? I'm going to</p>
<p style="text-align: right;">Page 86</p> <p>1 needed to be a basin.</p> <p>2 Q. Were there any recommendations that PELA</p> <p>3 made to ABC with regard to those four ditches</p> <p>4 that were disregarded, that you recall?</p> <p>5 A. No, not that I recall.</p> <p>6 Q. Earlier you were saying maybe that part of</p> <p>7 this would not be manmade. Were you referring to</p> <p>8 the blue line with the two arrows on the bottom</p> <p>9 of the photo that moved toward the lower dam and</p> <p>10 the river?</p> <p>11 A. Yes. I was referring to the drainage up</p> <p>12 close to the embankment, I guess you would call</p> <p>13 it.</p> <p>14 Q. And for the record for reference purposes,</p> <p>15 we're talking to the blue line that's just below</p> <p>16 the site number 1 which the explanation says is</p> <p>17 an infiltration test site?</p> <p>18 A. Yes.</p> <p>19 Q. Ms. George, do you know if this ditch that</p> <p>20 we're talking about now was part of the original</p> <p>21 tributary that ran through the site?</p> <p>22 MR. DAVIS: Object to the form. You can</p> <p>23 answer.</p>	<p style="text-align: right;">Page 88</p> <p>1 start at the location of 2, the infiltration</p> <p>2 test, and make a dash there; dash down to number</p> <p>3 1 infiltration test; and then a dash to the large</p> <p>4 arrow. I'm going to stop there because the USGS</p> <p>5 topo maps, 1971 and the 1938, indicate a slough,</p> <p>6 so that would not be included in the intermittent</p> <p>7 stream symbology.</p> <p>8 Q. Was the lower dam constructed across the</p> <p>9 slough?</p> <p>10 A. Yes.</p> <p>11 Q. If you would, can you just bring an arrow</p> <p>12 out here and write "UT"? That's our terminology</p> <p>13 for unnamed tributary. What would you refer to</p> <p>14 it as? You can call it whatever you think is</p> <p>15 proper for that which was designated on the USGS</p> <p>16 map, and you can abbreviate it and tell us what</p> <p>17 you're abbreviating for.</p> <p>18 A. I'm just going to write over here</p> <p>19 "intermittent stream."</p> <p>20 Q. All right, fair enough.</p> <p>21 A. May I write "approximate," please?</p> <p>22 Q. Yes, ma'am.</p> <p>23 A. (Witness complies.)</p>

<p style="text-align: right;">Page 89</p> <p>1 Q. I'm going to really take you down memory 2 lane now and ask -- and you can do it by 3 reference to these exhibits or any way that you 4 want to, but what I would like for you to do is 5 walk us through the site and some of these 6 primary features, and tell us what it looked like 7 when you first got there in 1979. I'll ask you 8 the first question, did the two dams that are 9 shown on Exhibit 6, were they in place? 10 A. Yes, they were. 11 Q. Were the two sediment basins in place? 12 A. Could you tell me more about what you mean 13 by "sediment basins"? 14 Q. You referred to it as a pond? 15 A. Yes, sir. 16 Q. So we can try to get the terminology 17 straight, the area between the lower dam and the 18 upper dam, what would you call that area? 19 A. The lower pond. 20 Q. Lower pond. The area above the upper dam 21 and the toe of the capped area, what would you 22 call that area? 23 A. Part of it would have been the upper pond.</p>	<p style="text-align: right;">Page 91</p> <p>1 and it did have fine materials that had settled 2 in it, too, clay-type material. 3 Q. During the time that you were there from 4 '79 to '84, was the upper sediment pond ever 5 cleaned out or excavated? 6 A. Yes, it was. 7 Q. How many times, or how often? 8 A. I don't know. 9 Q. Was that done by ABC? 10 A. ABC or their contractor. 11 Q. How did they excavate or remove the 12 material? 13 A. With a backhoe on tracks, I believe. I do 14 recall they got stuck one time. 15 Q. Now, earlier you said that there was a road 16 that came into that area of the mine site at that 17 time; is that right? 18 A. We never referred to this as the mine site. 19 It was always the rock disposal area. 20 Q. Rock disposal area, okay. 21 A. Yes, there was a road that went from the 22 top of the pre-law area up at the north end of 23 Exhibit 6, that you could drive all the way down</p>
<p style="text-align: right;">Page 90</p> <p>1 Q. Were the upper and lower ponds in existence 2 when you got there? 3 A. Yes. 4 Q. What was in them? 5 A. From time to time there was water impounded 6 behind them, and there was also eroded sediment. 7 Q. What was the purpose of those two ponds? 8 A. It's my understanding they were just as 9 named, sediment ponds, to capture sediment before 10 it went into the Locust Fork. 11 Q. Sediment from where? 12 A. From the refuse area and the native 13 Pottsville that was eroding. 14 Q. Did you ever see the upper sediment, is 15 that what you called it? 16 A. Sediment. 17 Q. Sediment pond full of refuse material? 18 A. I saw it full. I'm not sure it would all 19 be refuse material. 20 Q. Was it full of solid material up to the top 21 of the dam? 22 A. I'm not sure if it was up to the top, but 23 it was quite -- you know, at capacity, let's say,</p>	<p style="text-align: right;">Page 92</p> <p>1 to the area between the two ponds. 2 Q. You know what I'm going to ask you to do 3 next, right? Can you take the red pen and show 4 us the general path of that road? 5 MR. DAVIS: After she makes that 6 illustration, can we take a break? 7 MR. BROCK: Yes. 8 A. Can I have a wide marker, please? 9 Q. Yes. 10 A. I'm going to start by MO-7, because I'm 11 really not sure where it might have been up at 12 the top. I won't cover up my red writing. 13 Q. Thank you. 14 A. (Witness complies.) 15 Q. So the thicker red line is the path of the 16 road through the rock -- 17 A. Disposal area. 18 Q. -- disposal area, okay. 19 (Whereupon, at this time a lunch break was 20 taken.) 21 Q. Ms. George, we're back on the record after 22 a lunch break. I hope you had a nice lunch. 23 A. I did.</p>

<p style="text-align: right;">Page 93</p> <p>1 Q. Good. I was asking you some questions 2 about the status of the rock disposal area when 3 you got to the site in 1979, a few more questions 4 about that. So the area that you marked on 5 Plaintiff's Exhibit 6 earlier -- scratch that. 6 On Exhibit 7, it has the approximate intermittent 7 stream area? 8 A. Yes, sir. 9 Q. What did that stream area look like when 10 you first saw it in 1979? 11 A. Well, obviously, we talked about the fact 12 that the lower pine and upper pine and associated 13 dams were there. I'm not sure I can just tie 14 this to '79, because we were in and out of the 15 site, you know, early on. Sometimes there was 16 impounded water behind each of the sediment 17 ponds; there was sediment fill in the hollow or 18 the valley; there were drainage courses along the 19 upper eastern side. The upper pine or the upper 20 dam was not a substantial structure as it was at 21 the end of our project. 22 Q. With regard to the area where you made the 23 slashed red line below SW-2, was there a stream</p>	<p style="text-align: right;">Page 95</p> <p>1 it looked like, potentially looked like before, 2 even before there were any mining activities 3 there, so I can just tell you what I saw. 4 Q. Right, I understand. You know, none of us 5 were there and we've had some difficulty, you 6 know, just piecing together the sequence, and 7 when things happened and what things looked like, 8 clearly before any disturbance; and mining that 9 stream looked a particular way, but I don't know 10 how it looked when you got there, if it was 11 visible or discernible at all, and that's what 12 I'm trying to ask. 13 A. Well, I think I've answered it. Maybe I 14 didn't make myself clear, but there was fill in 15 the valley, the two ponds were there, sometimes 16 there was water in the ponds, sometimes there 17 wasn't. 18 Q. How about further north in the area that 19 was later capped? Could you see any visible on 20 the surface part of that stream or tributary in 21 that area? 22 A. My recollection was that they had already 23 started -- well, they were using it as a refuse</p>
<p style="text-align: right;">Page 94</p> <p>1 that you could see visibly on the surface? 2 A. No, there was not at that point, because 3 there was also disposal areas up in the upper 4 part of the area to be capped. I'd say that any 5 of the runoff was ephemeral at that time. 6 Q. Was the stream that you marked in there, 7 the intermittent stream, was it buried under fill 8 material when you first got there? 9 A. I'm not sure I would characterize it that 10 way, because I don't really know what it looked 11 like before Alabama Byproducts had the road and 12 any of the dam structure and things like that. 13 And I did say that there was fill in the hollow. 14 Q. Okay. So what I'm really, I guess, trying 15 to ask is, the blue line intermittent stream that 16 we see on the USGS maps, the older maps, was 17 there any visible stream on the surface as it's 18 depicted on the USGS maps, in that location when 19 you got to the site? 20 A. See, I'm not sure -- I understand your 21 question, but I'm not sure I can make that 22 comparison, because parts of the area had been 23 cleared and logged, and I really don't know what</p>	<p style="text-align: right;">Page 96</p> <p>1 area at the time. That's why there's the 2 distinction of the pre-law, post law. 3 Q. So the area that was capped was already 4 being used as a refuse area when you first got 5 there? 6 A. In part. Part of it was, yes. 7 Q. Which part? 8 A. Certainly the area that's north of the 9 north ditch on Exhibit 7, and I can't tell you 10 how far down-slope at first, but part of that was 11 being used also. 12 Q. Do you know where the headwaters of the 13 tributary were, in terms of north or south of the 14 north ditch? 15 A. I think the USGS mapping could get that 16 out, a reference to it. I think it is within or 17 north of that area; but, again, it's an 18 intermittent stream ending the eroded valley. 19 (Whereupon, Plaintiff's Exhibit Number 2 20 was marked for identification, a copy of which is 21 attached to the original of the transcript.) 22 Q. Let me go ahead and show you this that I've 23 marked as Exhibit 2 to your deposition, and these</p>

<p style="text-align: right;">Page 97</p> <p>1 are some historic aerial photos and maps, I 2 believe. These were produced to us by Mr. Davis. 3 Are these your documents? They're Bates-stamped 4 PELA 1 through 26. 5 A. Yes, they are. 6 Q. Did you use these in preparing your report? 7 A. I did look at them, yes. There were 8 certain ones I relied on, not all of them. 9 Q. Where did you get the aerial photos? 10 A. I obtained them from the photography lab at 11 The University of Alabama. 12 Q. Did you obtain them after you were retained 13 as an expert in this case, or did you already 14 have them on-hand? 15 A. I retained them specifically for this 16 project. 17 Q. Looking through this stack, there are some 18 USGS maps, I believe. Do any of them help you 19 with the question you were just asking? 20 A. If I could read them. 21 Q. The print is too small? 22 A. Yes, sir. I mean, let me find one. 23 Q. Number 18, maybe?</p>	<p style="text-align: right;">Page 99</p> <p>1 A. Do you want to look at 19? 2 Q. Yes, ma'am. What is page 19 of Exhibit 2? 3 A. It's also a topographic map, but it's the 4 1971 version. 5 Q. And does this map show the rock disposal 6 area that we've been talking about? 7 A. It does have a symbology on the top of the 8 ridge that indicates the disturbed land. I 9 believe the words are -- I can't read what it 10 says. 11 Q. Can you take the red pen, if you don't 12 mind, and circle on that map? Does it show the 13 slough by the lower dam that we've been talking 14 about? 15 A. It does. 16 Q. Could you circle that for us? 17 A. (Witness complies.) May I label it? 18 Q. Yes, please. 19 A. (Witness complies.) 20 Q. Ms. George, my understanding of your 21 testimony, and you please correct me if I'm 22 wrong, is that what you're saying is, by the 23 time -- when you got to the site, this stream</p>
<p style="text-align: right;">Page 98</p> <p>1 A. It's a little hard to see, but I believe 2 that -- and I'm going to call it the valley. 3 Q. Okay. 4 A. The headwaters of an intermittent stream 5 depends on where USGS drew it, and it's pretty 6 arbitrary. 7 Q. Okay. 8 A. The stream does -- the valley does turn 9 north under what is the capped area, and it 10 becomes less and less steep as you go north, so 11 the drainage would have been underneath the 12 pre-law area. 13 Q. And you're pointing to Exhibit 6 when you 14 say, "The drainage would be underneath the 15 pre-law area"? 16 A. Yes, sir. 17 Q. What year is this map in number 18? 18 A. I believe it's '71. Oh, it's 2014, and it 19 just has the topos on it. 20 MR. BROCK: Richard might have brought his 21 magnifying glass. 22 MR. DAVIS: No, unfortunately I didn't. 23 That's not what I was looking for. I apologize.</p>	<p style="text-align: right;">Page 100</p> <p>1 shown on these USGS maps was not visible on the 2 surface, and it was in the area that at that time 3 contained fill material. Is that accurate? 4 A. I guess the problem I'm having is, we're 5 talking about water versus -- we're talking about 6 flow versus the physical setting; and because it 7 was still a valley, the drainage was flowing 8 through that valley, so I saw visible evidences 9 of the flow in the valley. 10 Q. What did that visible evidence look like? 11 A. Well, it was drainage that would go into 12 the water bodies behind the ponds, and some of 13 the early ditch work that was alongside the road 14 that I drew on Exhibit 6. I think that's about 15 all I could describe it as. 16 Q. While we're looking at this, would you turn 17 to the next page in that stack to PELA 20? What 18 is this document? 19 A. This is a frame of black-and-white aerial 20 photography dated April 4, 1951. 21 Q. Is that before there was any mining 22 activity conducted at the Maxine site? 23 A. There was no activity at the rock disposal</p>

<p style="text-align: right;">Page 101</p> <p>1 area.</p> <p>2 Q. Can you see the rock disposal area in this</p> <p>3 photo?</p> <p>4 A. I can see the location of where it is now.</p> <p>5 Q. Okay. And can you see the slough?</p> <p>6 A. Yes.</p> <p>7 Q. Would you mark that with the red pen?</p> <p>8 A. (Witness complies.)</p> <p>9 Q. If you would, would you turn to page 26,</p> <p>10 the last page? What is this document?</p> <p>11 A. This is a poor quality color aerial photo.</p> <p>12 I'm looking for the date, but I don't see it.</p> <p>13 Q. Yes, I didn't see one either.</p> <p>14 A. I don't know if it got cut off. I think it</p> <p>15 had it on there when I received it. But it's a</p> <p>16 more recent aerial photograph.</p> <p>17 Q. Yes, that's kind of what I was wondering,</p> <p>18 whether this was an old photo that had been</p> <p>19 colorized somehow, or this was a more recent</p> <p>20 color photo. Do you have an estimation of</p> <p>21 approximately what year it might be?</p> <p>22 A. No, I don't. It would be after the east</p> <p>23 and west and parallel ditches were in place.</p>	<p style="text-align: right;">Page 103</p> <p>1 looking at historical documents like that, we</p> <p>2 could make that discernation.</p> <p>3 Q. Was the 1971 topo map you referenced what</p> <p>4 we looked at in Exhibit 2?</p> <p>5 A. Yes, gray circled slope.</p> <p>6 Q. Do you know the dimensions of the dams when</p> <p>7 you first saw them?</p> <p>8 A. The lower dam probably covered the same</p> <p>9 territory that it does today.</p> <p>10 Q. In terms of its --</p> <p>11 A. Its width.</p> <p>12 Q. -- width?</p> <p>13 A. Yes.</p> <p>14 Q. What about its height?</p> <p>15 A. I'm not certain about that.</p> <p>16 Q. And you said during the time you were</p> <p>17 there, that the discharge was moved from the</p> <p>18 south end to the north end?</p> <p>19 A. Yes, the drainage pipe was at the south end</p> <p>20 when we started, same way.</p> <p>21 Q. Were there any other modifications or</p> <p>22 changes to the lower dam, that you recall, while</p> <p>23 you were working on the site?</p>
<p style="text-align: right;">Page 102</p> <p>1 Q. Can you see those on this photo?</p> <p>2 A. Sort of.</p> <p>3 Q. Okay. Will you circle the area where you</p> <p>4 can see the area where the ditches are?</p> <p>5 A. I'm going to label it "area ditches."</p> <p>6 Q. That sounds just fine.</p> <p>7 A. (Witness complies.)</p> <p>8 Q. Could I take a look at that real quick?</p> <p>9 A. Sure.</p> <p>10 Q. Thank you, ma'am. Ms. George, do you know</p> <p>11 what year the upper and lower dams were</p> <p>12 constructed?</p> <p>13 A. No, I don't.</p> <p>14 Q. Do you have a range?</p> <p>15 A. No. They were there when we started work.</p> <p>16 Q. Do you know what they are made of,</p> <p>17 material-wise?</p> <p>18 A. I'm thinking about the answer to my last</p> <p>19 question. The early '60s -- the '71 topo map</p> <p>20 doesn't have them on it, but it doesn't</p> <p>21 necessarily mean that it wasn't there in '71, or</p> <p>22 was. The photography from the '60s may or may</p> <p>23 not indicate it's there; so I don't think from</p>	<p style="text-align: right;">Page 104</p> <p>1 A. Well, I think I mentioned earlier that</p> <p>2 there was at least one period when limestone</p> <p>3 riprap was placed on the backside of the dam.</p> <p>4 Q. When you say "the backside," do you mean</p> <p>5 the river side?</p> <p>6 A. No, the --</p> <p>7 Q. The upgradient side?</p> <p>8 A. -- upstream side. I think there were hay</p> <p>9 bales and lime and things like that placed in</p> <p>10 proximity of the pond from time to time, and that</p> <p>11 was done in coordination with the agencies. But</p> <p>12 I don't remember any -- we kind of deviated from</p> <p>13 your first question, what did it look like when</p> <p>14 we first got there.</p> <p>15 Q. Well, I'm asking you that, and then I'm</p> <p>16 asking also about any changes that were made</p> <p>17 while you were there. And we're talking now</p> <p>18 about the lower dam.</p> <p>19 A. Other than what I've just said, I don't</p> <p>20 really remember.</p> <p>21 Q. The upper dam, do you know how tall it was</p> <p>22 when you first saw it?</p> <p>23 A. No, I don't.</p>

<p style="text-align: right;">Page 105</p> <p>1 Q. Was its width the same as it is today?</p> <p>2 A. I don't believe so. I think it didn't have</p> <p>3 the same width. I think it was shorter in</p> <p>4 length.</p> <p>5 Q. Was it expanded while you were there,</p> <p>6 lengthened?</p> <p>7 A. Yes, it was, and it had been repaired also.</p> <p>8 Q. In which direction was it lengthened? You</p> <p>9 might want to refer to Exhibit 6, if it will</p> <p>10 help.</p> <p>11 A. Yes, but I'm not sure my cartoon helps me</p> <p>12 there, so I can't say.</p> <p>13 Q. Do you remember the height of the dam being</p> <p>14 raised, the upper dam?</p> <p>15 A. I'm not certain.</p> <p>16 Q. I know you've testified some about the</p> <p>17 ponds when you first saw them. The upper pond,</p> <p>18 do you know its depth?</p> <p>19 A. No, I don't.</p> <p>20 Q. Do you know what volume of material that it</p> <p>21 would hold?</p> <p>22 A. No.</p> <p>23 Q. Same question about the lower pond, do you</p>	<p style="text-align: right;">Page 107</p> <p>1 continue to put more material in that area?</p> <p>2 A. Yes.</p> <p>3 Q. Do you know the depth of the material when</p> <p>4 you got there?</p> <p>5 A. Not when we initially started, but we</p> <p>6 drilled a number of wells at different locations.</p> <p>7 The boring logs would indicate that.</p> <p>8 Q. We can look at it; but if I said it was</p> <p>9 like 70 to 75 feet worth of material, would that</p> <p>10 sound accurate to you?</p> <p>11 A. Yes, I believe 76, or something like that,</p> <p>12 was the maximum thickness. That may have been in</p> <p>13 the pre-law area, though, the wells that are 4, 5</p> <p>14 and 6.</p> <p>15 Q. Right, north of the capped area?</p> <p>16 A. Yes.</p> <p>17 Q. What year was the reclaimed capped post law</p> <p>18 area capped?</p> <p>19 A. Somewhere around '82, '83. There's a</p> <p>20 chronology in one of PELA's documents that has</p> <p>21 that date in it.</p> <p>22 Q. Did PELA play any role in that process, the</p> <p>23 capping?</p>
<p style="text-align: right;">Page 106</p> <p>1 know the depth of volume?</p> <p>2 A. No. We never made estimates about how much</p> <p>3 water they would hold.</p> <p>4 Q. Or sediment?</p> <p>5 A. Not what the dam held. We did make some</p> <p>6 estimates about the amount of infill relative to</p> <p>7 looking at the possibility of taking the water</p> <p>8 and letting it -- pumping it into the abandoned</p> <p>9 parts of the underground mine.</p> <p>10 Q. Yes, I've seen some reference to that in</p> <p>11 some of the documents. Did that ever happen?</p> <p>12 A. No, it did not. Again, we coordinated with</p> <p>13 the agencies, and that was something that AWIC</p> <p>14 made the decision that that wasn't going to</p> <p>15 happen.</p> <p>16 Q. With reference to Exhibit 6, what's</p> <p>17 referred to there is the capped reclaimed area.</p> <p>18 What did that look like when you first got to the</p> <p>19 site?</p> <p>20 A. It was being used for current disposal of</p> <p>21 the refuse rock, but I can't tell you how far</p> <p>22 down in the valley it was being used at the time.</p> <p>23 Q. During the time you were there, did ABC</p>	<p style="text-align: right;">Page 108</p> <p>1 A. We did infiltration tests at a couple of</p> <p>2 locations after it was capped, and I know we also</p> <p>3 had discussions about the sloping of the refuse</p> <p>4 and the areas we capped so that it would drain to</p> <p>5 the western ditch.</p> <p>6 Q. On Exhibit 6, I want to ask you now about</p> <p>7 the ditches that are shown. First, the dashed</p> <p>8 line, it says, is a diversion ditch pre-law area</p> <p>9 drainage. Would that be what is also referred to</p> <p>10 as the east ditch?</p> <p>11 A. One of them, yes. Yes. Yes.</p> <p>12 Q. Good point. I'm referring to the dashed</p> <p>13 line that starts right by MO-7 and goes south.</p> <p>14 A. Yes, sir.</p> <p>15 Q. Is that the east ditch?</p> <p>16 A. Yes.</p> <p>17 Q. Would you take the pen and just write E</p> <p>18 beside it?</p> <p>19 A. (Witness complies.)</p> <p>20 Q. Was that ditch in place when you got to the</p> <p>21 site?</p> <p>22 A. There was a drain that captured runoff, but</p> <p>23 I don't think it was in the same configuration as</p>

<p style="text-align: right;">Page 109</p> <p>1 it was at the end of the project. 2 Q. How was it reconfigured? 3 A. Well, I think earthmoving equipment defined 4 it better, and I don't recall what side of the 5 road or if the road didn't exist after a certain 6 point. I just don't remember that. 7 Q. How deep was it when you got there? 8 A. It didn't have a consistent depth. It 9 varied. 10 Q. From what to what? 11 A. I really don't remember. 12 Q. Do you remember the width? 13 A. You're talking about the ditch itself? 14 Q. Yes, ma'am. 15 A. I don't remember that. 16 Q. What area of the rock disposal area did the 17 east ditch drain? 18 A. The initial one or the final one? 19 Q. The initial one. 20 A. The initial one? 21 Q. By my question, I want you to understand 22 I'm asking basically pre-law or post law. 23 A. Oh. Both.</p>	<p style="text-align: right;">Page 111</p> <p>1 A. Yes. 2 Q. And that happened in approximately 1982 or 3 '83, you said? 4 A. You know, obviously, it was a work in 5 process because of coordinating with the 6 agencies, and it would take time on the ground to 7 make these things happen. 8 Q. On Exhibit 6, is the north ditch shown on 9 that drawing? 10 A. Part of it is. 11 Q. Where is the part of it that is visible? 12 A. It's the dash line that's between MO-4 and 13 MO-8. 14 Q. Can you take the pen and write an N on that 15 ditch, or just above it? 16 A. (Witness complies.) 17 Q. Was the north ditch in existence when you 18 got to the site? 19 A. No, it was not. 20 Q. When was it installed? 21 A. I certainly don't remember. 22 Q. Was it in operation when you finished your 23 work on the site in '84 or '85?</p>
<p style="text-align: right;">Page 110</p> <p>1 Q. Initially it drained both? 2 A. Yes. 3 Q. Was that changed at some point in time? 4 A. Yes, because when the area was capped, the 5 area was graded so that it would slope towards 6 the west capped area; and if we look at Exhibit 7 7, there were terraces that facilitated the 8 direction of runoff. 9 Q. So tell me that again. It was changed in 10 what way, the slope? 11 A. The slope of the refuse rock and its 12 subsequent capping was sloped towards the 13 southwest, essentially, so that it would drain 14 towards the ditch on the southwest. 15 Q. So after that change in slope was made, the 16 capped area drained to the west; is that right? 17 A. That's right. 18 Q. But the pre-law area still drained to the 19 east ditch; is that correct? 20 A. Yes. 21 Q. And after that adjustment was made you 22 described, the east ditch was draining only the 23 pre-law area?</p>	<p style="text-align: right;">Page 112</p> <p>1 A. Yes. 2 Q. At that point in time, what area did the 3 north ditch drain? 4 A. It captured the runoff from the pre-law 5 area. 6 Q. From the pre-law area north of in the area 7 where MO-4 is? 8 A. Yes. 9 Q. And where did it channel the drainage that 10 it captured to? 11 A. The north ditch went to the west ditch. 12 And referring to Exhibit 6, you can even see the 13 contouring in the pre-law area, which is still 14 visible today. 15 Q. On Exhibit 6 or 7? 16 A. The contouring? 17 Q. Yes. 18 A. 7. 19 Q. Right. In the area north of the capped 20 area, right? 21 A. Yes. 22 Q. When was that contouring done? 23 A. I can't say precisely, no.</p>

<p style="text-align: right;">Page 113</p> <p>1 Q. Was it done after you got there?</p> <p>2 A. I'm really not sure.</p> <p>3 Q. On Exhibit 6, is the west ditch visible?</p> <p>4 A. Yes, it is.</p> <p>5 Q. Is it a solid line or a dash line?</p> <p>6 A. It is a solid line.</p> <p>7 Q. Can you mark a W to indicate the west</p> <p>8 ditch?</p> <p>9 A. I just want to make sure my terminology is</p> <p>10 correct. I know the dash line is for the</p> <p>11 pre-law, and I believe there are little</p> <p>12 indicators on there (indicating).</p> <p>13 Q. What did the west ditch drain? What did it</p> <p>14 discharge into at the time you completed your</p> <p>15 work on the site?</p> <p>16 A. The west ditch captured the runoff from the</p> <p>17 capped area, post law area, sent it through the</p> <p>18 basin that's shown on Figure 6 in the cartoon.</p> <p>19 Then after catching the sediment, the runoff</p> <p>20 would have gone off down through the valley and</p> <p>21 drained into the Locust Fork.</p> <p>22 Q. What did the east ditch discharge into? Is</p> <p>23 it the upper pond?</p>	<p style="text-align: right;">Page 115</p> <p>1 cross-over.</p> <p>2 Q. It looks like it's also into the upper pond</p> <p>3 on the west side, but you correct me if that's</p> <p>4 incorrect.</p> <p>5 A. I believe it went under the culvert and</p> <p>6 into the upper pond.</p> <p>7 Q. I'm going to show you some documents now</p> <p>8 that relate to these topics that we've been</p> <p>9 talking about. Some of them are PELA documents,</p> <p>10 a lot of them are ones that you used in your</p> <p>11 reference list in your report; some of them</p> <p>12 aren't. But if you have some recollection or</p> <p>13 knowledge about these, then tell us; and there</p> <p>14 will be some of them, maybe, that you don't, and</p> <p>15 if that's the case, you can tell us that. The</p> <p>16 reason I'm showing you these, you know, this is</p> <p>17 not all just a memory test. I'm hoping that</p> <p>18 these will be useful to give us a framework to</p> <p>19 talk about some of this and to jog your memory</p> <p>20 about things, okay?</p> <p>21 A. Okay.</p> <p>22 (Whereupon, Plaintiff's Exhibit Number 9</p> <p>23 was marked for identification, a copy of which is</p>
<p style="text-align: right;">Page 114</p> <p>1 A. Yes.</p> <p>2 Q. Well, one more ditch on this drawing, which</p> <p>3 is the slashed line to the west of the west</p> <p>4 ditch. Do you see that?</p> <p>5 A. Yes, sir.</p> <p>6 Q. What was that ditch referred to as?</p> <p>7 A. Based on the diagram, we called it the</p> <p>8 parallel ditch.</p> <p>9 Q. Is that what you called it?</p> <p>10 A. I don't remember calling it that, but</p> <p>11 that's what my drawing shows.</p> <p>12 Q. Right. So that dashed line is what's</p> <p>13 referred to as the parallel ditch on Exhibit 7,</p> <p>14 right?</p> <p>15 A. Yes.</p> <p>16 Q. Can you make a P beside that one, so we</p> <p>17 know?</p> <p>18 A. (Witness complies.)</p> <p>19 Q. And what did the parallel ditch drain?</p> <p>20 A. It captured the runoff from the pre-law</p> <p>21 area north of the capped area.</p> <p>22 Q. And what did it discharge that runoff into?</p> <p>23 A. It initially drained into under the</p>	<p style="text-align: right;">Page 116</p> <p>1 attached to the original of the transcript.)</p> <p>2 Q. And as we go through these, if you want to</p> <p>3 refer to these diagrams to help you remember it</p> <p>4 or explain it, that will be just fine.</p> <p>5 A. Okay, thank you.</p> <p>6 MR. DAVIS: I have a question, what was</p> <p>7 Exhibit 8?</p> <p>8 (Off-the-record discussion.)</p> <p>9 Q. Ms. George, I have handed you a document</p> <p>10 that's dated December 12, 1978, from the Drummond</p> <p>11 production. Do you recall ever seeing this</p> <p>12 before?</p> <p>13 A. I have seen it before today, but I don't</p> <p>14 recall seeing it, let's say, historically.</p> <p>15 Q. What is your recollection of when you saw</p> <p>16 it?</p> <p>17 A. Recently.</p> <p>18 Q. Oh, you saw it reviewing to prepare for the</p> <p>19 deposition?</p> <p>20 A. Yes, sir.</p> <p>21 Q. This was before you got to the mine site,</p> <p>22 right, December '78?</p> <p>23 A. Yes.</p>

<p style="text-align: right;">Page 117</p> <p>1 Q. And this is written by Mr. McDuff, who you</p> <p>2 said earlier that you remember working with him</p> <p>3 some on the site, right?</p> <p>4 A. Yes.</p> <p>5 Q. In Section D on the second page, he writes</p> <p>6 that "The active spoil area has no runoff control</p> <p>7 whatsoever." Do you know what is referred to</p> <p>8 there as the active spoil area?</p> <p>9 A. No, I don't.</p> <p>10 Q. You don't recall that terminology, or can</p> <p>11 you tell from the context of the document what</p> <p>12 he's talking about?</p> <p>13 A. Not for certain, no. I would have to</p> <p>14 guess.</p> <p>15 Q. When you arrived on the site, what was the</p> <p>16 appearance of the pre-law waste pile to the east</p> <p>17 of the area that was later capped?</p> <p>18 A. I'm sorry. Would you repeat that again?</p> <p>19 Q. Yes. I was just asking, what did that area</p> <p>20 look like?</p> <p>21 A. I'm sorry. Which area was it?</p> <p>22 Q. That area (indicating). It would have been</p> <p>23 the area to the east of the east ditch.</p>	<p style="text-align: right;">Page 119</p> <p>1 at Mr. Muncher's deposition, who is a Drummond</p> <p>2 witness, and I believe these are going to be</p> <p>3 pictures from the '80s that were among those that</p> <p>4 you produced. Can you flip through those and</p> <p>5 tell me that that is the case?</p> <p>6 A. And I'm sorry, what was the question?</p> <p>7 Q. Can you tell me that those are your photos</p> <p>8 from the 1980s?</p> <p>9 A. Yes, they're photographs from PELA's</p> <p>10 record.</p> <p>11 Q. If you would look at page 2933, is that a</p> <p>12 picture of the pre-law waste pile?</p> <p>13 A. Yes.</p> <p>14 Q. Do you know what year that would have been</p> <p>15 taken?</p> <p>16 A. Not specifically, no.</p> <p>17 Q. The next page, 2959, is that also a picture</p> <p>18 of the pre-law waste pile?</p> <p>19 A. Yes.</p> <p>20 Q. And the next one is 2963; same?</p> <p>21 A. Yes.</p> <p>22 Q. Do you know when that material was</p> <p>23 originally placed in that location?</p>
<p style="text-align: right;">Page 118</p> <p>1 A. There was very little vegetation; it</p> <p>2 essentially was a plateau with a flat top, and</p> <p>3 was gullied to the west.</p> <p>4 Q. Did that change at any point while you were</p> <p>5 there?</p> <p>6 A. Not notably that I recall, no.</p> <p>7 Q. Does that area look any different today</p> <p>8 than it did in the early 1980s?</p> <p>9 A. Absolutely, remarkable. There's very</p> <p>10 little area that is not vegetated; there's pine</p> <p>11 trees of various sizes. I don't know whether</p> <p>12 they were planted or volunteers. There's small</p> <p>13 two-inch pine saplings growing and pines of</p> <p>14 various heights and establishment. Pretty much,</p> <p>15 the area is covered with a layer of pine straw.</p> <p>16 Q. Is there any ground vegetation that you</p> <p>17 noticed other than pine straw?</p> <p>18 A. There are some small -- I don't know what</p> <p>19 kind of trees they are, they might be hardwoods</p> <p>20 or other pines.</p> <p>21 Q. Anything else?</p> <p>22 A. I don't think so.</p> <p>23 Q. I'll show you some pictures that we marked</p>	<p style="text-align: right;">Page 120</p> <p>1 A. Not the upper part of the material. '50s</p> <p>2 and '60s, and early '70s. It just depends on the</p> <p>3 location within the refuse pile.</p> <p>4 Q. Okay, I'll take that back. Thank you.</p> <p>5 Back to the document that we were looking at</p> <p>6 there on the second page, Mr. McDuff says in the</p> <p>7 last paragraph that "The old spoil areas are</p> <p>8 severely eroded." Would you agree with that</p> <p>9 characterization, based on what you saw when you</p> <p>10 first arrived on the scene?</p> <p>11 MR. DAVIS: Object to form.</p> <p>12 A. The word "severely" is, you know, a</p> <p>13 personal characterization, but they certainly</p> <p>14 were eroded.</p> <p>15 Q. Would you characterize the photos we just</p> <p>16 looked at as severely eroded material?</p> <p>17 A. I think I would say highly eroded. That</p> <p>18 would be more in tune to a technical, technical</p> <p>19 terminology.</p> <p>20 Q. In the last sentence, he says that that</p> <p>21 area should be regraded and a vegetative cover</p> <p>22 established. In the time you were out there, was</p> <p>23 that ever done?</p>

<p style="text-align: right;">Page 121</p> <p>1 A. If he is referring to what we've been 2 talking about, the pre-law area, the answer is 3 no. 4 (Whereupon, Plaintiff's Exhibit Number 10 5 was marked for identification, a copy of which is 6 attached to the original of the transcript.) 7 Q. Let me show you what I've marked as Exhibit 8 10 to your deposition. Have you seen that 9 document before? 10 A. I have. 11 Q. Did you see it in connection with preparing 12 for the deposition? 13 A. Yes. 14 Q. Did you see it back in 1979? 15 A. I don't recall if I had seen it or not. I 16 could have. 17 Q. Do you recall any discussion about it 18 during that time frame? 19 A. I think we have documents that refer to 20 notice of violations; but whether or not PELA was 21 given a copy of it, I don't know. 22 Q. Were you told at any point in time that the 23 Surface Mining Commission had issued this notice</p>	<p style="text-align: right;">Page 123</p> <p>1 A. I think so. I'm not certain. This is an 2 Office of Surface Mining Commission document, so. 3 Q. Yes, and I'm just asking for your 4 recollection. Did they have their own setup of 5 effluent limitations? 6 A. I think they did. 7 Q. Do you remember what they were numerically, 8 in terms of those values? 9 A. Just the pH; and, again, it could be AWIC 10 at the time, but 6 to 9 or 6 to 10 pH. 11 Q. What about for iron or manganese? 12 A. I don't recall what those might have been. 13 (Whereupon, Plaintiff's Exhibit Number 11 14 was marked for identification, a copy of which is 15 attached to the original of the transcript.) 16 Q. Let me show you what I've marked as Exhibit 17 11, and this is one of the documents that was 18 listed in your reference list on your Expert 19 Report, so apparently you reviewed it in 20 connection with doing your report, right? 21 A. I'm sorry, I'm not seeing the corresponding 22 numbers. 23 Q. It's like the middle of page 13.</p>
<p style="text-align: right;">Page 122</p> <p>1 of violation, and that some response was needed? 2 A. Oh, sure. I mean, that's why we were 3 contracted to do some of the work. 4 Q. That's why you were hired? 5 A. Yes, sir. 6 Q. I thought so, but I wanted to make sure 7 that that was your recollection, too. On the 8 second page, when it describes the violation, up 9 at the top, the handwritten part says, "Discharge 10 from disturbed area not within effluent 11 limitations." Do you see that part? 12 A. Yes, sir. 13 Q. What were the effluent limitations they 14 were referring to, if you know? 15 A. The Surface Mining Commission had 16 limitations established for, I'm certain for pH, 17 total suspended solids, and possibly iron. 18 Q. So that was a requirement of the Surface 19 Mining Commission and not AWIC? 20 MR. DAVIS: Object to form. You can 21 answer. 22 Q. I don't know, and I'm not suggesting one 23 way or the other.</p>	<p style="text-align: right;">Page 124</p> <p>1 A. Yes, I'm sorry. I was looking at the wrong 2 page. 3 Q. That's okay. In any event, this letter is 4 from August 6th of 1979, and it describes a visit 5 to the mine. Do you recall, was this the first 6 visit that you made there for PELA? 7 A. I think so. I have not seen this letter in 8 many years, decades. 9 Q. In the third line there, is that your 10 maiden name? 11 A. Yes, it is. 12 Q. How do you pronounce that? 13 A. Dildine. 14 Q. Dildine, okay. And it says that you all 15 made a review of the notice of violation, which I 16 believe is the one we were just looking at. Does 17 that square with your recollection? 18 A. I don't believe there were more than one in 19 '79, so it appears that way. 20 Q. This letter was written by Mr. Philip 21 Lamoreaux, correct? 22 A. That's right. 23 Q. And you were working with him at the time</p>

<p style="text-align: right;">Page 125</p> <p>1 on this project?</p> <p>2 A. Yes.</p> <p>3 Q. Were you the project manager, or did you</p> <p>4 have any particular title on this PELA project?</p> <p>5 A. I think I evolved into that.</p> <p>6 Q. How often during the work on the site,</p> <p>7 roughly '79 to '84, were you on the site?</p> <p>8 A. Often.</p> <p>9 Q. Weekly?</p> <p>10 A. It could have been monthly for some time.</p> <p>11 Q. So monthly for a period of years?</p> <p>12 A. No. I think after things got established,</p> <p>13 there were other folks that did the monitor runs.</p> <p>14 Q. Were you there more often early in the</p> <p>15 project?</p> <p>16 A. Yes.</p> <p>17 Q. What was PELA hired to do in 1979?</p> <p>18 A. I think there's subsequent documentation</p> <p>19 that shows that the work elements that Dr.</p> <p>20 Lamoreaux outlined was turned into a proposal</p> <p>21 that was authorized.</p> <p>22 Q. We'll look at that, then, when we get to</p> <p>23 that. In the third paragraph, Dr. Lamoreaux says</p>	<p style="text-align: right;">Page 127</p> <p>1 term, not a regulatory term.</p> <p>2 Q. What do you mean by that distinction?</p> <p>3 A. Well, there currently is distinction. When</p> <p>4 this project was going on, there may not have</p> <p>5 been.</p> <p>6 Q. Do you mean that Dr. Lamoreaux is using it</p> <p>7 as a technical term or a regulatory term?</p> <p>8 A. A technical term. And how we referred to</p> <p>9 the hollow may not be consistent throughout the</p> <p>10 documentation.</p> <p>11 (Whereupon, Plaintiff's Exhibit Number 12</p> <p>12 was marked for identification, a copy of which is</p> <p>13 attached to the original of the transcript.)</p> <p>14 Q. Let me show you what I've marked as Exhibit</p> <p>15 12. Ms. George, have you seen this letter</p> <p>16 before?</p> <p>17 A. Yes, I have.</p> <p>18 Q. Is this what you referred to earlier as the</p> <p>19 work elements that PELA was hired to perform?</p> <p>20 A. Yes.</p> <p>21 Q. This has eleven separate items listed.</p> <p>22 Were all of those work elements performed?</p> <p>23 A. I think for the most part, yes.</p>
<p style="text-align: right;">Page 126</p> <p>1 that "The rubble material is acting as a</p> <p>2 catchment area for recharge." Do you see that</p> <p>3 language?</p> <p>4 A. Yes.</p> <p>5 Q. What does that mean?</p> <p>6 A. That when it rains and there's contact with</p> <p>7 the material or runoff across the area, the</p> <p>8 material would accumulate in the subsurface</p> <p>9 saturation.</p> <p>10 Q. Then a little lower down in that paragraph,</p> <p>11 he says, "The area in violation is a tributary to</p> <p>12 the Locust Fork, which has, in part, been filled</p> <p>13 with rock disposal material." Do you see that</p> <p>14 part?</p> <p>15 A. Yes, sir.</p> <p>16 Q. Is that reference to what you've drawn on</p> <p>17 Exhibit 7? What you've labeled the intermittent</p> <p>18 stream, is that what he's referring to as the</p> <p>19 tributary there?</p> <p>20 A. Yes. If I may --</p> <p>21 Q. Sure.</p> <p>22 A. -- "tributary," at this time being written</p> <p>23 by geologists and hydrogeologists, is a technical</p>	<p style="text-align: right;">Page 128</p> <p>1 Q. Does that generally and accurately describe</p> <p>2 the work that PELA did, major components of it</p> <p>3 anyway?</p> <p>4 A. I think it's a better way to say it, to</p> <p>5 help me with my recollection, yes.</p> <p>6 (Whereupon, Plaintiff's Exhibit Number 13</p> <p>7 was marked for identification, a copy of which is</p> <p>8 attached to the original of the transcript.)</p> <p>9 Q. I'm handing you now what I've marked</p> <p>10 Exhibit 13, which is a letter dated November 1,</p> <p>11 1979. Really, just to complete the record, it</p> <p>12 appears that this is just confirming acceptance</p> <p>13 of that proposal by PELA from Mr. Cook. Is that</p> <p>14 what it appears to you?</p> <p>15 A. Yes, in the first paragraph. The second</p> <p>16 paragraph talks about drilling.</p> <p>17 Q. Okay. And he says, "It will not be</p> <p>18 necessary to drill the core test holes." Can you</p> <p>19 explain what that meant?</p> <p>20 A. Based on what he's saying, referring back</p> <p>21 to item 8 on Exhibit 12, we had proposed to core</p> <p>22 test holes. That's a special kind of drilling</p> <p>23 rig that makes a rock core, and Mr. Cook offered</p>

<p style="text-align: right;">Page 129</p> <p>1 that just drilling a shallow test hole rather 2 than using that coring rig into bedrock, would be 3 something that they wanted to do at this time. 4 Q. What would the coring that PELA had 5 proposed demonstrate, versus what Mr. Cook 6 authorized? 7 A. I'm not sure specifically what it would 8 demonstrate, but I think the element was proposed 9 to look at the makeup of the groundwater in the 10 bedrock, and Mr. Cook proposed looking at 11 something more shallow initially. And I think 12 this turned into MO-1. 13 Q. And MO-1, when it was ultimately drilled, 14 did it go into the bedrock or not? 15 A. No, it did not. Well, possibly a few feet. 16 We knew we hit bedrock. 17 (Whereupon, Plaintiff's Exhibit Number 14 18 was marked for identification, a copy of which is 19 attached to the original of the transcript.) 20 Q. I'm handing you what I've marked Exhibit 14 21 to your deposition. This is a PELA document, 22 dated November 6, 1979. It says in the first 23 sentence it's a progress statement. Do you</p>	<p style="text-align: right;">Page 131</p> <p>1 (Whereupon, Plaintiff's Exhibit Number 15 2 was marked for identification, a copy of which is 3 attached to the original of the transcript.) 4 Q. Take a look at what I've marked as Exhibit 5 15 to your deposition. This is a document that 6 was listed in your reference list on your Expert 7 Report. The first paragraph talks about staking 8 the location for MO-1. Do you see that part? 9 A. Yes, sir. 10 Q. Do you remember by reference Exhibit 6 11 where MO-1 was? 12 A. I thought it was between the two ponds and 13 between the two dams, and I think there's 14 documentation, a map that shows the locations of 15 MO-1 and MO-2. 16 Q. There probably is. If we get there, we'll 17 find it; and if we don't, I may come back and ask 18 you to give your best estimation of where it was. 19 Was the purpose of it to ascertain groundwater 20 chemistry, or something else? 21 A. At the time -- yes, in part. We were 22 looking at the dynamics of the system and how 23 much water there might need to be handled to</p>
<p style="text-align: right;">Page 130</p> <p>1 recall seeing these kinds of documents during the 2 project? 3 A. There were many. 4 Q. In paragraph 3, it talks about four water 5 samples collected. Do you recall where those 6 were taken? 7 A. No. No, I don't. 8 Q. Did PELA do the sampling itself, or did TTL 9 or someone else do the sampling? 10 A. We did the sampling. 11 Q. Did PELA have its own lab? 12 A. Yes. 13 Q. Were all of the samples that are mentioned 14 in these documents conducted by PELA done in 15 PELA's lab? 16 A. I'm not sure. I'm not sure what the lab 17 methods and the holding times were at this time. 18 Our laboratory was in Lakeland, Florida. 19 Q. Okay. So you shipped samples there for 20 analysis? 21 A. Yes. 22 Q. But it was a PELA-owned lab in Florida? 23 A. Yes. Yes.</p>	<p style="text-align: right;">Page 132</p> <p>1 potentially "dispose," in quotes, the water in 2 the underground mine. That was an initial 3 component of our project before this aspect 4 (indicating), and I'm pointing to Exhibits 7 and 5 6, started. 6 Q. In the second paragraph, this is Dr. 7 Lamoreaux writing again, he says that MO-1 is 8 going to be in a, [quote], "filled estuary" of 9 the Locust Fork. What area is he referring to 10 there? 11 A. I think he's talking about somewhere in the 12 area between, like I said, the two ponds. 13 Q. Between the two ponds? 14 A. Yes, down-slope of the upper pond or upper 15 dam, and up-slope of the lower pond and lower 16 dam. 17 Q. So down-slope of the upper dam? 18 A. Correct. 19 Q. In the pond area? 20 A. It would not have been a pond when we were 21 working there, though. 22 Q. But the dams were there, right? 23 A. May I rephrase that?</p>

Page 133

1 Q. Yes.

2 A. The area of -- capture of the runoff behind

3 the upper dam wouldn't have covered the area we

4 were drilling in.

5 Q. So you know it was below the upper dam?

6 A. Yes.

7 Q. These initial two wells, right?

8 A. MO-1 was.

9 Q. What about MO-2?

10 A. I think -- and again, hopefully we'll find

11 a map. I think MO-2 was between the upper dam

12 and the location of MO-3.

13 Q. That would make sense.

14 A. But without seeing one of the diagrams, I'm

15 not certain.

16 (Whereupon, Plaintiff's Exhibit Number 16

17 was marked for identification, a copy of which is

18 attached to the original of the transcript.)

19 Q. Please look at what I've marked as Exhibit

20 16. It's another PELA letter by Dr. Lamoreaux.

21 A. (Witness complies.)

22 Q. So he gives a progress update on various

23 items, all eleven. During this period of time,

Page 134

1 what sort of work were you performing personally

2 on the project?

3 A. I really can't say with certainty in late

4 November, but it was likely fieldwork, sampling,

5 preparing reports, helping to prepare the

6 progress reports. Whatever was documented, I

7 probably had some hand in it.

8 Q. At that point in time, I guess you had been

9 working there, what, two to three years?

10 A. Yes.

11 Q. Who was on-site with PELA that might have

12 been your supervisor or superior, if anyone?

13 A. Dr. Lamoreaux was on-site from time to

14 time. I don't recall when Doug Powell, who had

15 retired from USGS, had joined PELA as a senior

16 hydrogeologist, and he was on-site sometimes, or

17 supervising and directing the activities.

18 Q. So these documents were all produced by

19 Drummond, and they're represented, or testified

20 from their files and everything. Does PELA have

21 copies of any old records from this era in its

22 possession?

23 A. Very few.

Page 135

1 Q. You've looked for them?

2 A. I have looked for them.

3 Q. When you say "very few," what did you find,

4 if anything?

5 A. The final 1984 report; slides, but they

6 didn't go back this far. I know we took

7 pictures, but they didn't go back this far; and a

8 couple of the interim progress reports.

9 MR. DAVIS: And the permit.

10 A. Oh, yes, and the permit application, 1982

11 permit application for the Maxine Mine.

12 Q. And you've provided all those to Drummond's

13 attorneys?

14 MR. DAVIS: We produced to you what we had.

15 These seemed to duplicate. We gave you the

16 photographs. You're welcome to look at that,

17 too, but my understanding is it's duplicate.

18 A. I did not provide the permit application.

19 I assumed they had the record of that.

20 Q. I think we're going to have that in this

21 stack. If you see something that you recognize

22 as something you also had at PELA that's a

23 duplicate, will you try to remember to let me

Page 136

1 know?

2 A. Sure.

3 Q. This document, Exhibit 16, was one of the

4 ones cited in your report. Do you know, is there

5 anything about this that you relied on in your

6 report, or any opinion you formed?

7 A. I think they were for chronological

8 reference.

9 (Whereupon, Plaintiff's Exhibit Number 17

10 was marked for identification, a copy of which is

11 attached to the original of the transcript.)

12 Q. I'm handing you what I've marked Exhibit

13 17. Have you seen this document before,

14 Ms. George?

15 A. Yes, recently.

16 Q. In connection with preparing for the

17 deposition?

18 A. Yes, sir.

19 Q. Did you play any role in drafting the

20 conclusions that start on the second page which

21 is Bates-stamped 827?

22 A. I think all I can say is probably.

23 Q. This document was also one that was listed

<p style="text-align: right;">Page 137</p> <p>1 in the references for your report. If you'll</p> <p>2 turn to page 827, these are the conclusions that</p> <p>3 you all have drawn to date, as I understand it.</p> <p>4 Right?</p> <p>5 A. Yes.</p> <p>6 Q. And it says they are based on evaluation of</p> <p>7 data obtained from field investigations. What</p> <p>8 would that have consisted of?</p> <p>9 A. More than likely, things that were</p> <p>10 documented in the previous documents and the</p> <p>11 progress reports to Mr. Cook.</p> <p>12 Q. The first item says that "An aquifer system</p> <p>13 has been created above the groundwater system in</p> <p>14 the Pottsville Formation." By reference to</p> <p>15 Exhibit 6 or 7, where would this aquifer system</p> <p>16 that's referred to be located?</p> <p>17 A. I'm not sure of its entirety, but I think</p> <p>18 we were referring to the area between the upper</p> <p>19 dam -- I'm sorry, the lower dam and slightly</p> <p>20 up-slope of the upper dam.</p> <p>21 Q. Would you describe the material that was in</p> <p>22 that area as permeable?</p> <p>23 A. Permeability is relative. I know we did</p>	<p style="text-align: right;">Page 139</p> <p>1 you see that part?</p> <p>2 A. Yes, sir, item 3.</p> <p>3 Q. Would that process still be going on today</p> <p>4 in that area?</p> <p>5 A. It could be, but I believe it would be a</p> <p>6 more limited area, because the area up-slope has</p> <p>7 been capped. It should be vegetated.</p> <p>8 Q. Have you done any testing or looked at any</p> <p>9 sampling data that would tell you whether that</p> <p>10 aquifer is still present or not?</p> <p>11 A. The material in the valley is still there,</p> <p>12 so I think that part of the setting is much as it</p> <p>13 was; but limited to what we were talking about,</p> <p>14 the lower part of the valley.</p> <p>15 Q. Are there any natural processes that would</p> <p>16 make the aquifer go away if the material isn't</p> <p>17 removed?</p> <p>18 A. You said natural processes?</p> <p>19 Q. Right.</p> <p>20 A. Volunteer vegetation would reduce the</p> <p>21 amount of recharge.</p> <p>22 Q. Is there any vegetation on either the upper</p> <p>23 or lower ponds at this time?</p>
<p style="text-align: right;">Page 138</p> <p>1 some infiltration tests that would give us an</p> <p>2 indication of what the hydraulic conductivity</p> <p>3 was, but certainly it has a certain amount of</p> <p>4 ability to take on water and hold it.</p> <p>5 Q. Would you describe it as having a high</p> <p>6 hydraulic conductivity?</p> <p>7 A. Again, you know, it's relative. I'm not</p> <p>8 sure what you mean by "high." No, I don't</p> <p>9 believe so. I think there's enough clay material</p> <p>10 in it, that it wouldn't necessarily have a high</p> <p>11 conductivity, like a beach sand or something.</p> <p>12 Q. We may get to it in this stack, but was</p> <p>13 there some testing done by PELA in this area that</p> <p>14 we're talking about now, to assess that</p> <p>15 permeability?</p> <p>16 A. The map indicates that there was an</p> <p>17 infiltration test between the lower dam and the</p> <p>18 upper dam.</p> <p>19 Q. And it's designated by the number 1, with a</p> <p>20 black square beside it?</p> <p>21 A. Black square, yes, sir, on Exhibit 7.</p> <p>22 Q. In paragraph 3, it discusses the source of</p> <p>23 recharge to the aquifer as rainfall drainage. Do</p>	<p style="text-align: right;">Page 140</p> <p>1 A. Not the lower. Not the lower. I guess</p> <p>2 also, if the Locust Fork had a catastrophic flood</p> <p>3 and overtopped the lower dam and deposited a lot</p> <p>4 of clay material, it could limit the amount of</p> <p>5 direct recharge into the sediments that are</p> <p>6 there. That's all I can think of right offhand.</p> <p>7 Q. Are you aware of that happening since 1979?</p> <p>8 A. I don't remember that we had any floods to</p> <p>9 that extent since 1979, no, but there were</p> <p>10 before.</p> <p>11 (Whereupon, Plaintiff's Exhibit Number 18</p> <p>12 was marked for identification, a copy of which is</p> <p>13 attached to the original of the transcript.)</p> <p>14 Q. Let me show you another PELA document that</p> <p>15 I've marked Exhibit 18.</p> <p>16 MR. BROCK: This was also, Richard, Exhibit</p> <p>17 41 to Hicks' deposition.</p> <p>18 MR. DAVIS: Okay.</p> <p>19 Q. This was a letter from Dr. Lamoreaux to</p> <p>20 Bruce Smith at the Surface Mining Commission.</p> <p>21 Was this something that PELA did while you were</p> <p>22 working on the project, was to send updates to</p> <p>23 the mining commission?</p>

<p style="text-align: right;">Page 141</p> <p>1 A. Yes. I think the record would indicate how 2 frequently it was done. The purpose was to keep 3 the Surface Mining Commission informed of 4 progress in addressing the notice of violation. 5 Q. Would you read to yourself on the second 6 page, 832, paragraph number 2, the first sentence 7 about interstitial openings? Do you agree with 8 that sentence, is it accurate? 9 A. I don't have any reason to disagree with 10 it, and that's what I was attempting to describe 11 to you during our last question and answer. 12 Q. And that same paragraph talks about the 13 thickness of the zone of saturation. What does 14 that term mean? 15 A. It means the amount of material in the 16 subsurface that contained water. 17 Q. In this case, does "subsurface" mean below 18 the surface of the fill that's in that area? 19 A. Yes. 20 Q. On the last page of this document, 834, it 21 talks about installing a surface water gauging 22 station. What does that measure? 23 A. Depending on its level of sophistication,</p>	<p style="text-align: right;">Page 143</p> <p>1 A. I guess he was referring to drainage to the 2 Locust Fork. 3 Q. Was there a problem on the site when you 4 got there with acid water drainage? 5 MR. DAVIS: Object to form. 6 A. We were addressing what I think everybody 7 called low pH water. Whether or not it was 8 drainage, I'm not sure I can address that. I 9 know there was runoff, and we set up monitoring 10 stations, and the results do indicate there was 11 low pH measured at those locations. 12 Q. Did you use the term "acid mine drainage" 13 in describing that runoff? 14 A. I don't recall that we did. 15 Q. Are you familiar with that term? 16 A. Oh, sure. 17 Q. How would you define acid mine drainage? 18 A. Well, it's low pH, high in other mineral 19 contents. 20 Q. Did PELA take surface water samples on the 21 Maxine site that would meet what you would 22 consider the definition of acid mine drainage? 23 A. I haven't really made that correlation,</p>
<p style="text-align: right;">Page 142</p> <p>1 it could measure the height or change of surface 2 water. 3 Q. Do you recall any data being generated from 4 that gauging station? 5 A. I don't recall if we installed anything 6 that would constitute a station. We may have put 7 some gauging -- technology has changed so much, I 8 can't remember what they were called. They were 9 more or less just a ruled-off porcelain and metal 10 yardstick that you would place so that you could 11 take readings periodically by observation. 12 Q. So this is not something that would measure 13 like flow of surface water on the site? 14 A. A gauging station like USGS has on the 15 Warrior River, certainly they measure flow and 16 gauge height on a real frequent basis. But I 17 think what we were referring to here was setting 18 up something that you would make an observation 19 as to what the level was. 20 Q. In the numbered fourth paragraph where Dr. 21 Lamoreaux is talking about, [quote], "acid water 22 discharging from the system," what was it 23 discharging to?</p>	<p style="text-align: right;">Page 144</p> <p>1 because we didn't use that term, but there were 2 measurements at various locations for the 3 results. You could classify it as that. I don't 4 know if it was really drainage from a 5 mine-constituted area, though. 6 Q. What do you mean by "a mine-constituted 7 area"? 8 A. When I think of acid mine drainage and I 9 think the way it initially came out in literature 10 and discussions and investigations, were old 11 portals of underground mines that the water was 12 actually flowing out onto the ground and into 13 surface water systems; and likewise, the same 14 thing from abandoned surface pits, I think our 15 reference to anything that was below a neutral 16 pH, we just referred to as low pH water. 17 Q. Numerically, what would be -- you said 18 "below neutral," but -- 19 A. 6. Sorry. 20 (Whereupon, at this time a short break 21 was taken.) 22 (Whereupon, Plaintiff's Exhibit Number 19 23 was marked for identification, a copy of which is</p>

<p style="text-align: right;">Page 145</p> <p>1 attached to the original of the transcript.)</p> <p>2 Q. Back from a break, on the record, I'll show</p> <p>3 you what I've marked as Exhibit 19. Following up</p> <p>4 with what we were just discussing, this relates</p> <p>5 to the notice of violation that we looked at</p> <p>6 earlier. And my question is, down at the bottom</p> <p>7 it mentions a permanent treatment of acid mine</p> <p>8 runoff, and assigns an abatement date. Do you</p> <p>9 see that part?</p> <p>10 A. I do.</p> <p>11 Q. Was that part of what PELA was hired to do,</p> <p>12 was to try to develop a permanent treatment of</p> <p>13 acid mine runoff on the site?</p> <p>14 A. Yes. You know, I think that was</p> <p>15 everybody's goal. I'm sorry, I'm referring back</p> <p>16 to the NOV. I think I've answered that question.</p> <p>17 I'm sorry.</p> <p>18 Q. I'm sorry, I thought you had something else</p> <p>19 you wanted to add.</p> <p>20 A. Well, I thought I was going to, but my</p> <p>21 research didn't indicate that.</p> <p>22 (Whereupon, Plaintiff's Exhibit Number 20</p> <p>23 was marked for identification, a copy of which is</p>	<p style="text-align: right;">Page 147</p> <p>1 Q. And the purpose of those diversion ditches</p> <p>2 was to reroute surface runoff and sediment on the</p> <p>3 site; is that correct?</p> <p>4 A. That's what it says.</p> <p>5 (Whereupon, Plaintiff's Exhibit Number 21</p> <p>6 was marked for identification, a copy of which is</p> <p>7 attached to the original of the transcript.)</p> <p>8 Q. Let me show you what I've marked Exhibit</p> <p>9 21. Can you identify this for us for the record,</p> <p>10 please?</p> <p>11 A. This is an internal memo written by me,</p> <p>12 dated July 30, 1980.</p> <p>13 Q. Okay. Do you remember writing this memo?</p> <p>14 A. I don't remember writing it, but I</p> <p>15 certainly remember the components, or some of the</p> <p>16 components of it, yes.</p> <p>17 Q. And the third item there, you say that "The</p> <p>18 dam was constructed across an embayment." What</p> <p>19 does the word "embayment" mean, or what does it</p> <p>20 refer to on the site by reference by maybe</p> <p>21 Exhibit 6 or Exhibit 7?</p> <p>22 A. It refers to that slough that I outlined on</p> <p>23 one of the topographic maps. I think I was using</p>
<p style="text-align: right;">Page 146</p> <p>1 attached to the original of the transcript.)</p> <p>2 Q. I'm showing you what I've marked Exhibit 20</p> <p>3 to your deposition. This is a PELA letter dated</p> <p>4 March 10, 1980, by Mr. Lamoreaux. Have you seen</p> <p>5 this document before?</p> <p>6 A. Yes, I have.</p> <p>7 Q. This letter lays out eight alternatives, or</p> <p>8 potential alternatives for abatement of water</p> <p>9 quality problems on the site. It says, "Were any</p> <p>10 of these eight or which of these eight were</p> <p>11 implemented?"</p> <p>12 A. Well, I'm certain that 1, 2 and 3 were not</p> <p>13 accepted as alternatives, and 5, 6 or 7 -- 5, 6</p> <p>14 and 8 were not accepted as alternatives, but</p> <p>15 ultimately there was a system of diversion</p> <p>16 ditches which, in part, may have been a</p> <p>17 springboard off of 4; and for some reason,</p> <p>18 there's no 7.</p> <p>19 Q. Yes, I noticed that, too. So the</p> <p>20 alternative here that is closest to what was</p> <p>21 actually implemented is number 4?</p> <p>22 A. Yes, just the discussion related to</p> <p>23 diversion ditches generally, yes.</p>	<p style="text-align: right;">Page 148</p> <p>1 Dr. Lamoreaux's language. I believe that was in</p> <p>2 one of the previous letters.</p> <p>3 Q. Throughout this memo, you refer to "a</p> <p>4 system." Can you explain to us what you mean in</p> <p>5 this context, by "a system"?</p> <p>6 A. I think it's documented in the previous</p> <p>7 letter by Dr. Lamoreaux to Doug Cook, our</p> <p>8 objectives at the time were trying to address the</p> <p>9 saturated materials in the valley fill, and how</p> <p>10 to handle that water. Maybe that's what I meant</p> <p>11 by "system." I'm not sure I would call something</p> <p>12 like that a system today. Even on the next page,</p> <p>13 750, we were looking at ways to, you know,</p> <p>14 physically handle that water.</p> <p>15 Q. Would "a system" in this context mean</p> <p>16 basically the same as a drainage area or a</p> <p>17 watershed or sub watershed?</p> <p>18 A. I don't know how to answer that.</p> <p>19 Q. When you say in item 5 that "The water in</p> <p>20 the system had high concentrations of iron and</p> <p>21 manganese," what particular area were you</p> <p>22 referring to?</p> <p>23 A. I don't think this document really</p>

<p style="text-align: right;">Page 149</p> <p>1 indicates that; but in the previous sentence, 2 there's reference to the monitoring wells and the 3 monitoring sites that are all in the lower part 4 of the valley. 5 Q. If you look at the last page in this 6 Document 755, are you with me there? 7 A. I'm there, yes. 8 Q. What is this document? 9 A. It's a topographic map that was prepared -- 10 I believe it was prepared especially for Alabama 11 Byproducts, and it shows some of the monitoring 12 stations. 13 Q. And as I'm reading it, the ones that say MO 14 are for groundwater, and the ones that just say M 15 are surface water; is that correct? 16 A. Yes. Referring back to item 4, that's 17 correct. 18 Q. And looking at page 755, that site M-2, 19 where exactly was that located in relation to the 20 lower dam? 21 A. Topographically, it looks like it's on the 22 lower dam; but as I was referring to earlier 23 today, the point of drainage at the lower dam was</p>	<p style="text-align: right;">Page 151</p> <p>1 A. Can be. Yes, sir. 2 Q. So this is water quality analyses, and this 3 data on this page is from three different dates 4 from samples collected at the Maxine site? 5 A. Yes. 6 Q. August 27th, January 24th, and 7 February 22nd? 8 A. Yes. 9 Q. And the sample sites across the top 10 correspond to those that are marked on page 755; 11 is that correct? 12 A. They appear to, yes. 13 Q. Do you know who did the analysis on these 14 sample results on page 751? 15 A. PELA would have done the field 16 determinations, and I can only assume we sent 17 them to our laboratory. If not, it may have been 18 TTL. 19 Q. On the next page, 752, these are just three 20 subsequent sample dates, correct? 21 A. Yes, in March and April of 1980. 22 Q. Page 753 are three more dates that go 23 through the latest, May 29, 1980; is that</p>
<p style="text-align: right;">Page 150</p> <p>1 at the south end. 2 Q. Was the point of drainage at the south end 3 at the time of this memo in 1980? 4 A. I believe so, yes. 5 Q. So what I'm really getting at is, was M-2 6 measuring discharge at a spillway or over or 7 through the dam at that point? 8 A. There was drainage through, I'd say, the 9 emergency spillway. 10 Q. Where was M-4 located that seems to be just 11 north of that? 12 A. It looks like it was something at the north 13 end of the pond, but I don't recall what it was. 14 Q. Do you recall how those surface water 15 samples were collected from M-4? In other words, 16 was it standing water or moving water, or what 17 sort of surface water there was being sampled? 18 A. Looking back on the table, it doesn't have 19 a flow associated with M-4, so there may not have 20 been runoff. 21 Q. While we're on that page, let me make sure 22 that I'm interpreting this document correctly. 23 On page 751, is that where you are?</p>	<p style="text-align: right;">Page 152</p> <p>1 correct? 2 A. Yes, sir. 3 Q. And following through to page 754, it looks 4 like this sample ends at July 14, 1980. Is that 5 correct? 6 A. Yes. 7 Q. At this time, was there a discharge permit 8 that was in place in this area of the rock 9 disposal area? 10 A. I don't believe so, no. I don't think that 11 was a requirement. 12 Q. Did you ever review a NPDES permit that 13 related to an outfall number 24 that was in this 14 general area? 15 A. I know it's in the compendium of the 16 documents. 17 Q. Back then in 1980, were you aware of it? 18 A. The pond hadn't been constructed at this 19 time. 20 Q. When do you first recall being aware that 21 there was a NPDES discharge permit at an outfall 22 in this area of the rock disposal site? 23 A. Upon review of the documents.</p>

<p style="text-align: right;">Page 153</p> <p>1 Q. After this lawsuit was filed?</p> <p>2 A. Yes.</p> <p>3 Q. So back in the eighties when you were on</p> <p>4 the site, you were never cognizant of there being</p> <p>5 a NPDES sampling point in this area at all?</p> <p>6 MR. DAVIS: Object to the form.</p> <p>7 A. Not at the rock disposal area, no.</p> <p>8 Q. Did you ever review the permit of effluent</p> <p>9 limitations or any other information in the</p> <p>10 permit itself?</p> <p>11 A. There weren't any permits.</p> <p>12 Q. Are you aware that there was a NPDES permit</p> <p>13 at some point in the 1980s on the Maxine site?</p> <p>14 A. Yes.</p> <p>15 Q. When did it come into being, from your</p> <p>16 understanding?</p> <p>17 A. I would have to look at the document, but I</p> <p>18 believe it was after construction of that basin,</p> <p>19 which was in the mid '80s, near the mid '80s,</p> <p>20 somewhere around there.</p> <p>21 Q. Was it in effect from 1983 to '88, do you</p> <p>22 know?</p> <p>23 A. The permit?</p>	<p style="text-align: right;">Page 155</p> <p>1 topographical maps in that manner an accepted way</p> <p>2 to perform a volumetric calculation?</p> <p>3 MR. DAVIS: Object to form.</p> <p>4 A. Sure. You're comparing two different</p> <p>5 elevations. But you have to have the third</p> <p>6 component, too, not just the difference in</p> <p>7 elevation.</p> <p>8 Q. Third component, being?</p> <p>9 A. Well, the three dimensions.</p> <p>10 Q. What is the third dimension?</p> <p>11 A. The lateral extent and the actual -- we had</p> <p>12 a ground truthing, actual measurement based on</p> <p>13 the drilling data.</p> <p>14 Q. In item 7, you performed some calculations</p> <p>15 to get an estimate of the -- how much water was</p> <p>16 in the aquifer, do you see that? Can you explain</p> <p>17 how you made that calculation?</p> <p>18 A. Based on the cubic yards that were</p> <p>19 determined in item 6, using a porosity of</p> <p>20 25 percent, which would be the void space that</p> <p>21 would be occupied by water, do the calculations</p> <p>22 to go from cubic yards to gallons.</p> <p>23 Q. In item 8, you've got some calculations</p>
<p style="text-align: right;">Page 154</p> <p>1 Q. Yes.</p> <p>2 A. Without looking at the document, I'm not</p> <p>3 certain of the dates, but I know there wasn't one</p> <p>4 early on.</p> <p>5 Q. Did you ever have to compare PELA's data to</p> <p>6 the limits in the permit?</p> <p>7 A. I think what I referred to earlier was</p> <p>8 comparing, specifically, I know, pH to the 6 to 9</p> <p>9 limits. I would imagine we had compared the iron</p> <p>10 and the other constituents, too, but I'm not sure</p> <p>11 if it was, like you talked about earlier, AWIC or</p> <p>12 surface mining limitations, although I think it</p> <p>13 was surface mining limitations.</p> <p>14 Q. In paragraph 6 here, you've got some</p> <p>15 figures for volumetric calculations. Do you see</p> <p>16 that part?</p> <p>17 A. Yes.</p> <p>18 Q. How did you perform those calculations?</p> <p>19 A. I think based on some cross-sections that</p> <p>20 were made using the two different dates of</p> <p>21 topography, and the thickness of the fill</p> <p>22 material based on the MO-1 and MO-2.</p> <p>23 Q. Is the use of two different dated</p>	<p style="text-align: right;">Page 156</p> <p>1 related to annual precipitation. Do you see that</p> <p>2 part?</p> <p>3 A. Yes, sir.</p> <p>4 Q. Where do the 4.3 feet come from?</p> <p>5 A. I'm not certain. It may have been records</p> <p>6 accumulated by NOAA, the National Oceanic</p> <p>7 Atmosphere Administration, that were more</p> <p>8 specific to the area.</p> <p>9 Q. Do you know if that is -- that 4.3 figure,</p> <p>10 is that typical today of rainfall in the Maxine</p> <p>11 Mine area?</p> <p>12 A. No, I don't. I haven't looked at</p> <p>13 precipitation in that area in quite some time.</p> <p>14 Generally Alabama, you know, middle Alabama,</p> <p>15 somewhere around 55 inches.</p> <p>16 Q. Around 55 inches is typical in middle</p> <p>17 Alabama?</p> <p>18 A. Yes, sir.</p> <p>19 Q. As I understand this, then, when you</p> <p>20 convert that into gallons per minute, you're</p> <p>21 saying it's 480 gallons per minute working off of</p> <p>22 52 inches in annual rainfall, and that would be</p> <p>23 daily?</p>

<p style="text-align: right;">Page 157</p> <p>1 A. The 52 inches is per -- for a year.</p> <p>2 Q. Right.</p> <p>3 A. And the calculation was 252 million gallons</p> <p>4 per year.</p> <p>5 Q. Right.</p> <p>6 A. So then you would relate that back to</p> <p>7 gallons per day, hour, minute.</p> <p>8 Q. Right. But the 480 gallons is a</p> <p>9 calculation of gallons that flow per minute every</p> <p>10 day of the year for that year?</p> <p>11 A. Oh, I'm sorry, yes. Yes.</p> <p>12 Q. Right?</p> <p>13 A. Yes. I misunderstood your question.</p> <p>14 (Whereupon, Plaintiff's Exhibit Number 22</p> <p>15 was marked for identification, a copy of which is</p> <p>16 attached to the original of the transcript.)</p> <p>17 Q. Have a look at what I've marked as Exhibit</p> <p>18 22 to your deposition. Are you familiar with</p> <p>19 this document?</p> <p>20 A. Yes.</p> <p>21 Q. Can you tell us what it is that Dr.</p> <p>22 Lamoreaux is illustrating in these three numbered</p> <p>23 scenarios in this document?</p>	<p style="text-align: right;">Page 159</p> <p>1 fill up to 8 would cost \$4,548 a day for</p> <p>2 treatment?</p> <p>3 A. The water that's in it currently and the</p> <p>4 water that would continue to be there based on</p> <p>5 rainfall and runoff to that area.</p> <p>6 Q. For how long would you have to treat it in</p> <p>7 this manner to keep the pH at 8?</p> <p>8 A. I don't think that was a component that was</p> <p>9 evaluated.</p> <p>10 Q. Do you recall how Mr. Cook or ABC responded</p> <p>11 to this computation, I guess? I'm not sure it's</p> <p>12 a recommendation; but, I mean, as to number 3,</p> <p>13 did they accept that?</p> <p>14 MR. DAVIS: Object to form.</p> <p>15 A. I don't recall what Mr. Cook's response was</p> <p>16 to it, but the Alabama Water Improvement</p> <p>17 Commission did not accept the recommendation to</p> <p>18 put the water in the mine.</p> <p>19 Q. So this item number 3 also related to</p> <p>20 pumping water into the mine?</p> <p>21 A. Yes. Yes, the whole letter does.</p> <p>22 Q. Now you've educated me.</p> <p>23 (Whereupon, Plaintiff's Exhibit Number 23</p>
<p style="text-align: right;">Page 158</p> <p>1 A. Based on the titration evaluation and the</p> <p>2 pages that follow, Dr. Lamoreaux was summarizing</p> <p>3 the amount of water and the associated treatment</p> <p>4 and costs that it would take to adjust the pH to</p> <p>5 8, 9 or 10, with three different components of</p> <p>6 being able to put the water down in the mine.</p> <p>7 First, you would have to treat the water in the</p> <p>8 mine up to this level, one of these levels, so</p> <p>9 that whatever the pH was in the mine -- and I'm</p> <p>10 not sure it says it anywhere in here, it may --</p> <p>11 so that when you introduce the water from the</p> <p>12 surface into the mine, it just doesn't null-out,</p> <p>13 you've already elevated the pH of the water in</p> <p>14 the mine.</p> <p>15 Q. Let me ask you this, because it looks to me</p> <p>16 like number 1 and number 2 are dealing with the</p> <p>17 mine or the underground part of the pit, whereas</p> <p>18 number 3, I'm not sure. Number 3 refers to the</p> <p>19 rock fill area, so does that relate to the waste</p> <p>20 pile area?</p> <p>21 A. I think that's the valley, the valley fill.</p> <p>22 Q. So what he's illustrating here is to bring</p> <p>23 the pH of the water discharging from the valley</p>	<p style="text-align: right;">Page 160</p> <p>1 was marked for identification, a copy of which is</p> <p>2 attached to the original of the transcript.)</p> <p>3 Q. I've showed you what I've marked as</p> <p>4 Plaintiff's Exhibit 23. This is a PELA document</p> <p>5 dated December 30, 1980. Have you seen this</p> <p>6 document before?</p> <p>7 A. Yes, recently.</p> <p>8 Q. In the fourth paragraph, he indicates that</p> <p>9 the upper pond is silted up to the level of the</p> <p>10 spillway. Do you see that part?</p> <p>11 A. I do.</p> <p>12 Q. Do you recall seeing it in that condition?</p> <p>13 A. I don't recall, but it does indicate I was</p> <p>14 there.</p> <p>15 Q. But you don't recall one way or the other?</p> <p>16 A. No, I don't.</p> <p>17 Q. Would you agree with me that a sediment</p> <p>18 pond, if it is full of sediment, can't perform</p> <p>19 its function properly of settling-out solids?</p> <p>20 MR. DAVIS: Object to form.</p> <p>21 A. It certainly wouldn't be near as efficient.</p> <p>22 You would still have water slowing down and going</p> <p>23 over the top of it. Some settlement would</p>

<p style="text-align: right;">Page 161</p> <p>1 happen, but it wouldn't be as efficient as it was 2 constructed to be. 3 Q. Right. In fact, further in that paragraph, 4 Dr. Lamoreaux says that it's filled in 5 two-and-a-half to three feet, and that will 6 greatly eliminate the retention time. Do you see 7 that part? 8 A. Yes. 9 Q. So that's a true statement, right? 10 A. Yes. 11 Q. And if you eliminate the retention time, 12 wouldn't it be true that more solids are going to 13 travel through the pond, over its surface, 14 downgradient toward the river? 15 A. I think that's what the last part of the 16 sentence says, yes. 17 Q. He described this as an item of concern he 18 was presenting to ABC. Do you remember what 19 action, if any, in response to this letter ABC 20 took? 21 A. Cleaned out the pond. 22 Q. Do you think or do you know that they did, 23 or is that your best recollection?</p>	<p style="text-align: right;">Page 163</p> <p>1 A. I don't know for certain. 2 Q. This is a document which I believe deals 3 with a mixing zone. Do you recall that? 4 A. Yes, sir. 5 Q. Do you remember ever discussing this work 6 or a mixing zone with any state regulators? 7 A. I think we discussed it on-site with AWIC. 8 Q. What's your best recollection of that 9 discussion? 10 A. Not substance. 11 Q. Do you know if notices of violation were 12 issued after this point in time where you 13 established this so-called "mixing zone"? 14 A. There was an additional notice of 15 violation, but I thought it had to do with the 16 upper part of the rock disposal area. 17 Q. Can you explain to us the methodology that 18 PELA employed in calculating or establishing what 19 it referred to as a mixing zone? 20 A. Using a boat; a tape that we used as a sign 21 to measure the depth of the water; used a 22 specific conductance meter that had a long cable 23 on it, and I specifically remember this because</p>
<p style="text-align: right;">Page 162</p> <p>1 A. I recall that there was earthmoving 2 equipment in that area several times. Sediments 3 were removed. 4 Q. Would you agree that if you don't 5 periodically remove the sediments, that a 6 sediment pond is not going to function properly? 7 MR. DAVIS: Object to form. 8 A. Well, it depends on where the spillway is 9 relative to how much water there is when the 10 rainfall event comes in. But with time, yes, if 11 it fills up to the point that everything is just 12 washing over, yes. 13 (Whereupon, Plaintiff's Exhibit Number 24 14 was marked for identification, a copy of which is 15 attached to the original of the transcript.) 16 Q. Let me show you what I've marked Exhibit 24 17 to your deposition, and this is one of the 18 documents you had in your reference list for your 19 Expert Report. Are you familiar with this 20 document? 21 A. Yes. 22 Q. Was this document ever submitted to state 23 regulators?</p>	<p style="text-align: right;">Page 164</p> <p>1 typically the meters only had cables that were 2 three or four feet long, and it had to be 3 acquired. Since this was pre-GPS or anything, we 4 may have had a rope stretched across the river 5 temporarily so that we could determine where we 6 were at each station. The station was 7 established so many feet from the bank all the 8 way across at intervals; the depth of the water 9 was measured, and then the specific conductance 10 sign was lowered incrementally and measurements 11 made. 12 Q. If you look at page 32 in this document, 13 it's got a topo map with some explanatory 14 material. 15 A. Yes, sir. 16 Q. So what does M1-1 represent, or MI-1? 17 A. If you look on page 29, the last paragraph 18 indicates that MI-1 was in the mixing zone 19 itself. 20 Q. How far is MI-1 from the shoreline? 21 A. I don't see that there's a specific 22 reference to it, but in looking -- it says it's 23 within the mixing zone. If you look at 34, page</p>

<p style="text-align: right;">Page 165</p> <p>1 34, please --</p> <p>2 Q. All right.</p> <p>3 A. -- it shows the extent of the mixing zone</p> <p>4 out 25 to 35 feet, and it would be someplace in</p> <p>5 that area that's what we called it, but I don't</p> <p>6 know specifically where.</p> <p>7 Q. Do you know what depth the measurement was</p> <p>8 taken at MI-1?</p> <p>9 A. MI-1?</p> <p>10 Q. Yes.</p> <p>11 A. I don't think the report indicates that.</p> <p>12 Q. So on page 30, we have a comparison of MI-1</p> <p>13 and M-2. Is that M-2 location the same that we</p> <p>14 looked at earlier --</p> <p>15 A. Yes.</p> <p>16 Q. -- on the south end of the lower dam?</p> <p>17 A. Yes.</p> <p>18 Q. So basically, this is comparing the water</p> <p>19 chemistry at M-2 versus MI-1 here on page 30?</p> <p>20 A. That's correct. For comparison, if we look</p> <p>21 at the specific conductance on page 30 for MI-1,</p> <p>22 and look back at the diagram on page 34, I'm not</p> <p>23 sure we can correlate the symbology; but the</p>	<p style="text-align: right;">Page 167</p> <p>1 zone exercise?</p> <p>2 A. I think in answer to your earlier question,</p> <p>3 I don't know whether or not it was given to an</p> <p>4 agency, but it was completed at the request of</p> <p>5 Doug Cook, which I believe he had implemented as</p> <p>6 a result of the NOV or discussions with the</p> <p>7 agency. In fact, I think there is somewhere in</p> <p>8 the record that Mr. Cook asked that we</p> <p>9 specifically do this as an additional aspect of</p> <p>10 working on the rock disposal area.</p> <p>11 Q. So Mr. Cook at ABC would have requested</p> <p>12 PELA to perform this mixing zone exercise?</p> <p>13 A. He authorized it.</p> <p>14 Q. And they paid PELA to do it?</p> <p>15 A. Yes.</p> <p>16 (Whereupon, Plaintiff's Exhibit Number 25</p> <p>17 was marked for identification, a copy of which is</p> <p>18 attached to the original of the transcript.)</p> <p>19 Q. I've handed you what has been marked</p> <p>20 Exhibit 25. This is also one of the documents</p> <p>21 listed in your expert list, reference list. This</p> <p>22 is a folder that is titled Supplement to Permit</p> <p>23 Application. Is this similar to the documents</p>
<p style="text-align: right;">Page 166</p> <p>1 specific conductance was 140, so it would -- I</p> <p>2 can't compare the symbology. I was trying to do</p> <p>3 that, but it's not working. There's too many</p> <p>4 stipples that look the same that was reproduced.</p> <p>5 Q. Right, for those different numeric levels</p> <p>6 of conductance?</p> <p>7 A. Yes. I was trying to see where the extent</p> <p>8 of the 140 was on the diagram.</p> <p>9 Q. So conceptually, what does the concept of a</p> <p>10 mixing zone mean in this application? What does</p> <p>11 it show you? What does it prove?</p> <p>12 A. Well, it demonstrates where the water</p> <p>13 entering the Locust Fork from the lower pond, it</p> <p>14 shows an elevated, slightly elevated specific</p> <p>15 conductance, versus the conductance over the rest</p> <p>16 of the river. It shows it had a limited extent</p> <p>17 out into the river and a limited extent down the</p> <p>18 river. It's 180 feet by 40 feet.</p> <p>19 Q. To your knowledge, was any mixing zone ever</p> <p>20 established at the Maxine site by any state</p> <p>21 regulators?</p> <p>22 A. No.</p> <p>23 Q. To what use did PELA or ABC put this mixing</p>	<p style="text-align: right;">Page 168</p> <p>1 that you said PELA had?</p> <p>2 A. No. We had the original permit</p> <p>3 application.</p> <p>4 Q. Have you seen this document before?</p> <p>5 A. I have.</p> <p>6 Q. Did you review it recently?</p> <p>7 A. Yes, sir.</p> <p>8 Q. Which permit was this application</p> <p>9 pertaining to?</p> <p>10 A. I don't see the permit number here, but it</p> <p>11 was Maxine's P, whatever number it was, 32.</p> <p>12 Q. 3254, maybe? Something close to that. Is</p> <p>13 that the surface mining or the mining permit?</p> <p>14 A. Yes.</p> <p>15 Q. Did PELA provide some information to ABC in</p> <p>16 connection with its permit application in 1982?</p> <p>17 A. Yes.</p> <p>18 Q. If you would look at page 219 in this</p> <p>19 document, starting at the bottom of the page,</p> <p>20 area 2, the reference to the active coal</p> <p>21 processing waste bank, what area of the site is</p> <p>22 that a reference to, if you know?</p> <p>23 A. It makes reference to a map. The map is</p>

<p style="text-align: right;">Page 169</p> <p>1 after page -- I can't read the number on it, it's 2 too small. 3 Q. On the map? 4 A. The Bates number. 5 MS. ANDREEN: It's 267. 6 A. Looking at the map, map 405 on 267, it's 7 the area labeled as number 2, the active washer 8 refuse disposal area. That is the capped area. 9 Q. Right, the capped area is basically what 10 they're talking about there? 11 A. Right. Yes, sir. 12 Q. And they describe in a couple of paragraphs 13 a plan that they have for reclaiming and 14 abandoning that area. Are you familiar with the 15 content of what's set forth in this page? 16 A. Yes, it talks about the diversion ditches. 17 Q. Is this basically what ended up being 18 implemented on the site? You can take your time 19 to read it. 20 A. I think this is the conceptual stage still, 21 so it's not the end result. 22 Q. Do you know if this Area 1 that they 23 discuss was ever approved and constructed?</p>	<p style="text-align: right;">Page 171</p> <p>1 sure it's that area. 2 Q. Do you know if this information was 3 actually submitted to the ASMC as part of the 4 permit application? 5 A. I don't have any reason to believe that it 6 wasn't. 7 Q. If you'll turn to page 222 within that 8 document, there's a PELA document there. Do you 9 see that? 10 A. Yes. 11 Q. It's from July 30th of 1982. Did you work 12 on this document? 13 A. Yes, sir. 14 Q. Did you draft all of it or parts of it? 15 A. I don't believe all of it, but possibly the 16 majority of it, and then reviewed by Dr. 17 Lamoreaux and Mr. Powell. 18 Q. If you'll turn to page 239 -- actually, I 19 think I've already asked you all the questions 20 that I would have about that page. 21 A. Okay. 22 Q. On page 241, the discussion of the surface 23 water monitoring program, do you see that part?</p>
<p style="text-align: right;">Page 170</p> <p>1 A. I think it was approved. I think it was 2 cleared. I'm really not sure if it was ever 3 used. If it was, it was after the fact. I'm not 4 really sure. 5 Q. In the top paragraph there on page 220, 6 Bates-stamped 220, page 4 of the document, it's 7 discussing the reclamation of the post law area, 8 and it says that they were going to cover it with 9 one foot of clay and then revegetate it. Do you 10 know if that's what was done? 11 A. I think it was two feet of clay, and I know 12 it was revegetated. 13 Q. Then it says that "The basin will be 14 reclaimed and vegetated." Did that ever happen? 15 A. I'm not sure which basin is being 16 referenced here. 17 Q. I thought they were referring to the basin 18 shown in Exhibit 7. 19 A. Could be. 20 Q. But you don't know for sure? 21 A. Yes, I believe it is referring to an 22 additional basin besides the upper and the lower 23 ponds; but, again, this was conceptual. I'm not</p>	<p style="text-align: right;">Page 172</p> <p>1 A. Yes, I do. 2 Q. It describes, the wording uses "segregate 3 runoff." Do you recall that being an objective 4 of this plan that PELA drafted? 5 A. I'm sorry, I don't see where "segregate" 6 is. 7 Q. It's in the first sentence under the 8 heading Surface Water Monitoring Program. 9 A. Oh, "to segregate the runoff." Yes. 10 Q. And it indicates below, as we discussed 11 earlier, that the east side channel would collect 12 from the old material, and the west side would 13 collect from the capped area, correct? 14 A. Correct. 15 Q. As we've already discussed. Why was the 16 objective to segregate the runoff in that manner? 17 A. To segregate the pre-law and the post law 18 contribution to drainage. 19 Q. Was there a scientific reason to do it that 20 way? 21 A. Well, the science is based on the 22 configuration of land surface and the 23 configuration of a planned final land surface,</p>

<p style="text-align: right;">Page 173</p> <p>1 but the reason was to move forward with 2 regulatory requirements for permitting and 3 operating the Maxine Mine in their rock disposal 4 area. 5 Q. Is what you just said, that was your 6 understanding of the purpose of segregating the 7 runoff? 8 A. Yes, it was. 9 Q. And who told you that? 10 A. I think there were a number of discussions 11 with Randy Johnson, the ABC engineers. I don't 12 know if Mr. Willett was involved in discussions, 13 but I think there was correspondence regarding 14 that. 15 Q. Do you remember the Clean Water Act ever 16 coming up in any of those discussions? 17 A. No, sir. 18 Q. How was the capped area reclaimed? 19 A. In part, it was the way the waste was 20 placed there. It was placed in maybe six-inch or 21 twelve-foot lifts so it would be more compact; it 22 was sloped to not necessarily a design plan, but 23 it was sloped so it would drain towards the west;</p>	<p style="text-align: right;">Page 175</p> <p>1 A. There wasn't any regulatory requirement at 2 the time. 3 Q. That was your understanding? 4 A. Yes, sir. 5 Q. And what was the basis of that 6 understanding? I mean, you don't have any legal 7 training, do you? 8 A. No. 9 Q. Did you make a legal analysis about what -- 10 A. I did not. 11 Q. -- what they were obligated to do or not? 12 A. I did not. It wasn't our recommendation. 13 We were consulting to Alabama Byproducts, with 14 the objective of satisfying the NOV's and 15 obtaining permits. It wasn't required. It 16 wasn't asked for. 17 Q. Okay. Some testimony earlier in the case 18 indicated that this area, the pre-law, is not 19 within the boundary of the mining permit. Do you 20 know if that's true, or not? 21 A. It's my recollection that mining permits 22 for underground mines had to do with their 23 surface activities, such as airshafts, washers,</p>
<p style="text-align: right;">Page 174</p> <p>1 and terraced; and then the one foot or two foot 2 of cap material which was from a nearby borrow 3 pit; and it was tested, the material fit criteria 4 for using as cover. It was placed and then 5 vegetated and augmented with nutrients and 6 whatever. 7 Q. Was all of that reclamation work completed 8 by the time you left in '84? 9 A. Yes, in the capped area. The only part I'm 10 not certain about was some of the lower ditch 11 construction. I know the cross-over was 12 completed. Yes, it was completed, because we did 13 monitoring, post cap monitoring. 14 Q. What reclamation work was done on the 15 pre-law area in comparison? 16 MR. DAVIS: Object to the form. 17 Q. If any? 18 A. The pre-law area north of the north ditch 19 was contoured to drain into the ditch. 20 Q. What about the rest of the pre-law area? 21 A. There was no work, to my knowledge, done on 22 the pre-law area to the east of the capped area. 23 Q. Do you know why not?</p>	<p style="text-align: right;">Page 176</p> <p>1 conveyors, roads, active rock disposal areas, and 2 that's what was permitted. 3 Q. But my question was whether the pre-law 4 rock disposal area was within the permit, or not? 5 A. No, it was not. 6 Q. Were you aware of that back in the '80s? 7 A. Sure. 8 Q. What impact did that have, if any, on any 9 of the work that PELA did; did it matter? 10 A. I don't understand the question. 11 Q. Okay. Did it matter to PELA in any way, in 12 any of the hydrologic analysis or work you did, 13 whether this area was within the mining permit 14 boundary or not? 15 MR. DAVIS: Object to the form. You can 16 answer. 17 A. I don't understand what "matter" means. We 18 were monitoring at surface water points and 19 groundwater points. I'm not sure I understand 20 what you mean. 21 Q. Would you have performed your work any 22 differently if the area had been within the 23 permit boundaries?</p>

<p style="text-align: right;">Page 177</p> <p>1 A. I don't know the answer to that. The 2 permitting was completed in accordance with the 3 requirements of surface mining regs as to what 4 underground mines had to do at the time. 5 (Whereupon, at this time a short break 6 was taken.) 7 (Whereupon, Plaintiff's Exhibit Number 26 8 was marked for identification, a copy of which is 9 attached to the original of the transcript.) 10 Q. Can you tell, is Exhibit 26 a PELA 11 document? I know part of it is, starting at 12 1798. 13 A. I believe so. I think it was generated by 14 ABC as a result of follow-up questions. I was 15 wondering that myself, to be honest with you, 16 where it came from. 17 Q. Item 3 talks about hydrology monitoring and 18 the, [quote], "old disposal area" for a year. I 19 think that's referring to the capped area there. 20 In any event, is that what happened, in fact, did 21 PELA monitor that for a year after vegetative 22 cover? 23 A. I believe so. I think our final report in</p>	<p style="text-align: right;">Page 179</p> <p>1 recollection? 2 A. 3, 4, 5 and 6. I don't remember the 3 sequence of installation, but the purpose of 4 installing 7, 8 and 9 were related to evaluating 5 the post effect of capping. One of the wells, 7 6 or 8, was actually drilled through the post law 7 area and cased through the post law area, and 8 then drilled down into the pre-law area; so you 9 were just monitoring the pre-law, the deeper 10 underneath, and then the other well was 11 shallower, to make a comparison of what was going 12 on in the pre-law and the post law at the same 13 location. 14 Q. Let me see if I understand what you're 15 saying. Are you saying within the depth of some 16 of the material, some of the deeper material was 17 considered pre-law? 18 A. Yes. 19 Q. At what depth did it become or was it 20 deemed to be pre-law? 21 A. We'll have to look at the boring logs. 22 Q. Was that true for the entire capped area? 23 A. No.</p>
<p style="text-align: right;">Page 178</p> <p>1 1984 documents all those activities, summarizes 2 them, anyway. 3 Q. If you would look at page 1798, and just 4 confirm if that is a PELA document that sets out 5 some of the details of that monitoring program? 6 A. It looks like a more formal recap of some 7 of the letters to Mr. Cook. 8 Q. Were there some groundwater wells that were 9 installed as part of the monitoring program? 10 A. Yes, MO-3 through MO-9. 11 Q. And are those shown on Exhibits 6 and 7? 12 A. Some of them are shown on 7; all of them 13 are shown on 6. 14 Q. So Exhibit 6 contains all of the monitoring 15 wells that PELA ever installed on the Maxine 16 site? 17 A. Yes. 18 Q. Were Wells 3 through 9 installed at the 19 same time? 20 A. I think 7 and 8 were installed after -- and 21 possibly 9, after the capping, so. 22 Q. Which ones were pre-capping and which ones 23 were post capping, to the best of your</p>	<p style="text-align: right;">Page 180</p> <p>1 Q. Just parts of it? 2 A. Just the upper part, is my recollection. 3 Q. Can you specify when you say "upper"? 4 A. No. 5 Q. How much of it? 6 A. No, I can't. I'm sorry. 7 (Whereupon, Plaintiff's Exhibit Number 27 8 was marked for identification, a copy of which is 9 attached to the original of the transcript.) 10 Q. Ms. George, will you take a look at what 11 I've marked as Exhibit 27? This is another PELA 12 document that deals with these monitoring wells. 13 If you could, do you see the part that describes 14 four wells in the middle of the page, first page? 15 A. Yes. 16 Q. And the first one, A, it says "Up-dip from 17 the capped area." What number monitoring well 18 would that correspond to in number 6? 19 A. Either 4 or 5 or 6. 20 Q. What about B, "Down-dip from the capped 21 area," what would that correspond to? 22 A. MO-3. 23 Q. Two wells in the capped area, it looks like</p>

<p style="text-align: right;">Page 181</p> <p>1 there are actually three, right?</p> <p>2 A. That's correct.</p> <p>3 Q. So apparently there was an adjustment made</p> <p>4 to this outline or plan?</p> <p>5 A. Right. This was a plan.</p> <p>6 Q. And for the record, this was one of the</p> <p>7 documents you listed in your reference list on</p> <p>8 your expert report. Did you review this for</p> <p>9 historical reference, or for what purpose in</p> <p>10 connection with your report?</p> <p>11 A. Chronological information.</p> <p>12 (Whereupon, Plaintiff's Exhibit Number 28</p> <p>13 was marked for identification, a copy of which is</p> <p>14 attached to the original of the transcript.)</p> <p>15 Q. If you would, take a look at what has been</p> <p>16 marked Exhibit 28, and let us know if you recall</p> <p>17 seeing this document before?</p> <p>18 A. I do.</p> <p>19 Q. It looks like on the second page, you</p> <p>20 signed it. Is that right?</p> <p>21 A. Yes, sir.</p> <p>22 Q. In this letter, you and Dr. Lamoreaux set</p> <p>23 out eight different recommendations. Can you</p>	<p style="text-align: right;">Page 183</p> <p>1 (Whereupon, Plaintiff's Exhibit Number 29</p> <p>2 was marked for identification, a copy of which is</p> <p>3 attached to the original of the transcript.)</p> <p>4 Q. Please look at what has been marked Exhibit</p> <p>5 29 to your deposition. Have you seen this</p> <p>6 document before?</p> <p>7 A. I did sign it.</p> <p>8 Q. On the second page, it talks about breaker</p> <p>9 rock samples. Do you recall where those samples</p> <p>10 were taken from?</p> <p>11 A. I think these were collected by ABC from</p> <p>12 various locations underground in the mine, and</p> <p>13 this was a component of requirement for the</p> <p>14 permit.</p> <p>15 Q. Okay. So this is underground --</p> <p>16 A. Yes.</p> <p>17 Q. -- breaker rock?</p> <p>18 A. Yes.</p> <p>19 Q. On the first page there's some data there</p> <p>20 for Maxine compared to other mines, and it</p> <p>21 indicates that the neutralization potential is a</p> <p>22 lot lower than the others. Do you know why that</p> <p>23 was or would be?</p>
<p style="text-align: right;">Page 182</p> <p>1 tell us which of these were undertaken? It looks</p> <p>2 like the third page is a map, but I can't see any</p> <p>3 of the sites that are listed in that list of</p> <p>4 eight items.</p> <p>5 A. I can't say that they all were completed as</p> <p>6 a result of this letter. As I discussed earlier,</p> <p>7 and I think there was another letter after</p> <p>8 another inspection that upon going to the site,</p> <p>9 if we saw issues that were not consistent with</p> <p>10 the planning, or based on things that had</p> <p>11 happened during rain events, we made</p> <p>12 recommendations to ABC to, as it says on page 2,</p> <p>13 to ensure the segregation and the monitoring and</p> <p>14 maintenance.</p> <p>15 Q. Particular reference to number 7, you</p> <p>16 recommended building up a berm to prohibit</p> <p>17 commingling. Do you recall if that was done?</p> <p>18 A. I assume it was done since the NOV and the</p> <p>19 Order were addressed. I'm not sure I actually</p> <p>20 witnessed it.</p> <p>21 Q. But as far as you recall, the segregation</p> <p>22 of the two streams was accomplished?</p> <p>23 A. The ditches? Yes.</p>	<p style="text-align: right;">Page 184</p> <p>1 A. Maxine Mine was mining the American coal</p> <p>2 seam; the Mary Lee 2, Segco 7 and Mary Lee 1,</p> <p>3 were obviously mining the Mary Lee coal seam</p> <p>4 which is a deeper coal seam, a different coal</p> <p>5 seam, and I think Segco and Chetopa were also</p> <p>6 established in the Mary Lee coal seam.</p> <p>7 Regardless of that, there's different</p> <p>8 environments at different places in the Warrior</p> <p>9 basin.</p> <p>10 Q. It also indicates a lot higher pyritic</p> <p>11 sulfur content in the Maxine Mine samples. What,</p> <p>12 if anything, does that indicate?</p> <p>13 A. That it's different from other locations.</p> <p>14 Again, it likely has to do with the geology and</p> <p>15 the environment and deposition of the coal.</p> <p>16 (Whereupon, Plaintiff's Exhibit Number 30</p> <p>17 was marked for identification, a copy of which is</p> <p>18 attached to the original of the transcript.)</p> <p>19 Q. Ms. George, you're looking at Exhibit 30.</p> <p>20 Would you turn to page 3542? And there are some</p> <p>21 latitude and longitude coordinates for wells, is</p> <p>22 that what those are?</p> <p>23 A. Yes, sir.</p>

<p style="text-align: right;">Page 185</p> <p>1 Q. Are these some of the wells that are on the</p> <p>2 Maxine site?</p> <p>3 A. No, sir.</p> <p>4 Q. Okay. What are these?</p> <p>5 A. These are wells that were drilled into the</p> <p>6 Pottsville formation to collect groundwater</p> <p>7 monitoring information for the overall mine</p> <p>8 permit.</p> <p>9 Q. The first two pages of this document, it</p> <p>10 looks like it's a letter that you wrote</p> <p>11 December 15, 1992?</p> <p>12 A. '82.</p> <p>13 Q. I'm sorry, '82. Do you recall this letter?</p> <p>14 A. Not very well.</p> <p>15 Q. Well, it seems to be discussing a process</p> <p>16 of training ABC personnel to do some of the</p> <p>17 monitoring work. Do you remember that happening?</p> <p>18 A. Yes.</p> <p>19 Q. So at some point in time, did they take</p> <p>20 over the groundwater well sample gathering?</p> <p>21 A. Some of the information that was being</p> <p>22 collected was taken over by the mining staff. I</p> <p>23 believe we needed a year of monitoring data</p>	<p style="text-align: right;">Page 187</p> <p>1 deposition?</p> <p>2 A. I did sign it.</p> <p>3 Q. The main purpose of this, I guess, is just</p> <p>4 chronology? It seems to indicate on the second</p> <p>5 page that as of this time, February of '83, that</p> <p>6 the parallel ditch hadn't been constructed yet?</p> <p>7 A. Right, it appears to be still a work in</p> <p>8 process.</p> <p>9 Q. So that was the last ditch that was</p> <p>10 constructed, apparently, right?</p> <p>11 A. I can't say that with certainty, but</p> <p>12 possibly.</p> <p>13 Q. Possibly, okay.</p> <p>14 (Whereupon, Plaintiff's Exhibit Number 32</p> <p>15 was marked for identification, a copy of which is</p> <p>16 attached to the original of the transcript.)</p> <p>17 Q. I'm handing you what I've marked as Exhibit</p> <p>18 32 to your deposition. Did you play any role in</p> <p>19 preparing this document?</p> <p>20 A. More than likely, yes.</p> <p>21 Q. This is the first record that I see</p> <p>22 documenting surface water sampling results from</p> <p>23 SW-2 and SW-3 and SW-1, so I want to ask you</p>
<p style="text-align: right;">Page 186</p> <p>1 before you could submit a permit.</p> <p>2 Q. So did they go out and physically gather</p> <p>3 the samples from the wells?</p> <p>4 A. I'm not sure they did the sampling. This</p> <p>5 is relative to the water level recorders and rain</p> <p>6 gauges.</p> <p>7 Q. It says in the third paragraph, "They</p> <p>8 completed the monitoring well circuit." What</p> <p>9 does that mean?</p> <p>10 A. We went to each well at each mine site and</p> <p>11 inspected the conditions of the well and the</p> <p>12 instrumentation. One of the challenges in doing</p> <p>13 some of these projects is vandalism. People like</p> <p>14 to shoot at things that aren't -- things that are</p> <p>15 supposed to be there.</p> <p>16 Q. Use it as a target?</p> <p>17 A. Yes. Not the mine people.</p> <p>18 Q. Right.</p> <p>19 (Whereupon, Plaintiff's Exhibit Number 31</p> <p>20 was marked for identification, a copy of which is</p> <p>21 attached to the original of the transcript.)</p> <p>22 Q. Ms. George, have you seen this document</p> <p>23 before, that we've marked as Exhibit 31 to your</p>	<p style="text-align: right;">Page 188</p> <p>1 about those with reference to Exhibit 6. Are</p> <p>2 those surface water sampling points shown on</p> <p>3 Exhibit 6?</p> <p>4 A. Yes.</p> <p>5 Q. And if you look at page 430, the second</p> <p>6 page of this document, in the second paragraph,</p> <p>7 as I read it, it indicates that SW-2, the sample</p> <p>8 site, was in the west ditch. Do you see that</p> <p>9 part?</p> <p>10 A. Yes, sir.</p> <p>11 Q. Is that correct?</p> <p>12 A. Yes.</p> <p>13 Q. It looks like, looking at Exhibit 6, that</p> <p>14 SW-2 was a little bit downgradient from the basin</p> <p>15 that's shown there in the ditch. Is that</p> <p>16 correct?</p> <p>17 A. Yes.</p> <p>18 Q. And SW-3, it says, was in the east ditch?</p> <p>19 A. Yes.</p> <p>20 Q. So that means that somebody was taking a</p> <p>21 surface water sample out of those particular</p> <p>22 ditches and compiling this data, correct?</p> <p>23 A. That's right.</p>

<p style="text-align: right;">Page 189</p> <p>1 Q. Do you know how far apart SW-2 and SW-3 2 were? 3 A. No, I don't, and unfortunately neither of 4 these diagrams have scales. 5 Q. Do you remember approximately how many feet 6 apart they were? 7 A. No, I don't. 8 Q. What was used to mark or designate a 9 particular sampling spot that was designated 2 10 and 3? 11 A. I don't recall. 12 Q. On page 433 of this document, there's a 13 table. Would you take a look at that? It 14 appears to indicate three different sampling 15 dates for SW-2, SW-3, and MO-3. Is that correct? 16 A. Yes, sir. 17 Q. So when we see the column SW-2 and SW-3 on 18 the right, that will correspond to the two 19 locations we see on Exhibit 6? 20 A. Yes. 21 Q. This indicates on February 4, 1983, at SW-2 22 the pH was 4.4. That's below the 6 threshold 23 that you mentioned earlier, correct?</p>	<p style="text-align: right;">Page 191</p> <p>1 do you remember? 2 A. Not at this time. The objective at this 3 time was to get in the segregation of the waters 4 and monitor it and report as each event was taken 5 and the date it was compiled. 6 Q. So at this point in time you were just 7 trying to demonstrate a difference between the 8 two samples, SW-2 and SW-3? 9 A. Just monitor what it was. 10 Q. Pardon? 11 A. Monitor what the actual conditions were. 12 I'm not sure we were really making comparisons, 13 because everything wasn't completed yet. I don't 14 see that the report really does anything other 15 than just reporting what was done and what the 16 results were. 17 (Whereupon, Plaintiff's Exhibit Number 33 18 was marked for identification, a copy of which is 19 attached to the original of the transcript.) 20 Q. Let me show you Plaintiff's Exhibit 33. 21 Have you ever seen this before? 22 A. I have, just recently. 23 Q. In connection with preparing for the</p>
<p style="text-align: right;">Page 190</p> <p>1 A. It says 4.4, yes. 2 Q. So was there any action taken, that you 3 recall, to try to improve on the pH of that 4 discharge? 5 A. I don't recall at the time. 6 Q. And it indicates that the pH from the SW-3 7 sample was 2.9, correct? 8 A. Yes. 9 Q. Do you recall any action that was taken to 10 improve the water chemistry from that sampling 11 site? 12 A. Not that I recall. But if you look at the 13 last page, it indicates that grading of the 14 systems weren't completed yet either, so it was a 15 work in process. 16 Q. The last sentence of page 434 says "Grading 17 of pre-law refuse disposal area was initiated on 18 March 31, 1983." What grading was done of the 19 pre-law refuse? 20 A. I'm not certain, but it may have been 21 referring to the area north of the north ditch. 22 Q. What were the parameters or the objective 23 for SW-2 that you and ABC were trying to achieve,</p>	<p style="text-align: right;">Page 192</p> <p>1 deposition? 2 A. Yes. 3 Q. After the lawsuit was filed? 4 A. Yes. 5 Q. The bottom part of this has some 6 handwritten information that is recounting a 7 conversation about possible NPDES permits. Were 8 you involved in any of these discussions? 9 A. I don't believe so. It doesn't indicate 10 that I was involved in the inspection at this 11 time. 12 Q. And it also refers to an agreement that was 13 signed by Joe Myers. Do you know what that 14 reference is to? 15 A. I'm sorry, let me find that, please. 16 Q. That's the last sentence in the handwritten 17 part. 18 A. Oh, okay. I'm really not certain. It may 19 be related to the conclusion of inspections or 20 investigations regarding the lower part of the 21 valley. But I'm really not certain what it was. 22 Q. I'm just trying to find out if you have any 23 recollection of being involved in any discussion</p>

<p style="text-align: right;">Page 193</p> <p>1 about possibly having to get a permit for a 2 discharge from the diversion ditch that was 3 draining the reclaimed area? 4 A. Not on this occasion, no. That was always 5 an internal discussion. We have to achieve what 6 is being required, but an NPDES permit was not 7 required. 8 Q. What are you referring to that was being 9 required? 10 A. Addressing the rock disposal area, the 11 pre-law area, the post law area, obtaining the 12 initial permit that was submitted in 1982 to the 13 Surface Mining Commission; obtaining the 14 supplemental permit for the rock disposal area 15 off to the west; and satisfying the two Notices 16 of Violation. 17 Q. Earlier you mentioned, I think, the pH 18 needing to be between 6 and 9. Were there ever 19 any other water chemistry parameters like that, 20 that you were aware of, that ABC was trying to 21 achieve for the post law area? 22 A. I believe I talked about iron and 23 manganese, but I don't recall the specific range</p>	<p style="text-align: right;">Page 195</p> <p>1 Company. I don't know what their discussions 2 were, but I know throughout our period of working 3 with ABC, there were discussions of what might be 4 required and what might not. But there was not a 5 requirement for a NPDES permit ultimately. 6 Q. Right. And I know you're not shown on this 7 letter anywhere, but I know there were a lot of 8 meetings and discussions. So that's what I'm 9 trying to get at, is whether you were ever a part 10 of any meetings or discussions about what's 11 discussed in the fourth paragraph of this letter? 12 A. I don't know who Mr. Simon is. 13 Q. And you were not involved in any 14 discussions about a NPDES permit for the 15 reclaimed capped area? 16 A. I think I just said earlier that there were 17 discussions on-site, and even with the folks from 18 AWIC. 19 Q. Who were you having those discussions with? 20 A. Joe Myers was on-site several times. 21 Q. Did he specifically talk about a NPDES 22 permit in your presence? 23 A. I don't remember what terms we used.</p>
<p style="text-align: right;">Page 194</p> <p>1 that might have been applicable. Again, I 2 believe I was referring to ASMC, not AWIC. But 3 all the agencies, including OSM, were well aware 4 of what was going on. 5 (Whereupon, Plaintiff's Exhibit Number 34 6 was marked for identification, a copy of which is 7 attached to the original of the transcript.) 8 Q. I don't mean to belabor this point, but I'm 9 going to show you Exhibit 34, which is another 10 letter that relates to this same topic. If you 11 look at the third paragraph, that being -- well, 12 actually it's the fourth paragraph, there being 13 some discussion about ADEM requiring a NPDES 14 permit. It says, [quote], "For outflow through 15 the limestone filter," and I'm just trying to 16 make absolutely certain that you don't have any 17 knowledge about this, what's being described in 18 this letter, and weren't involved in any 19 discussions about it? 20 A. Well, I think I know what the limestone 21 filter is. I mean, we talked about that early 22 this morning about the lower pond and lower dam. 23 Again, this is a letter amongst ABC and Southern</p>	<p style="text-align: right;">Page 196</p> <p>1 Q. What do you remember him saying? 2 A. I don't remember any specifics of 3 conversation. 4 Q. In the last paragraph, there's a 5 description of a meeting with ADEM staff on 6 September 6, 1983. Were you a part of that 7 meeting? 8 A. No. Any meetings I was involved with, with 9 ADEM, I believe, were always at the site. 10 (Whereupon, Plaintiff's Exhibit Number 35 11 was marked for identification, a copy of which is 12 attached to the original of the transcript.) 13 Q. Ms. George, let me show you what I've 14 marked Exhibit 35 to your deposition. Take a 15 look at that, and let me know if you assisted in 16 the preparation of this report? 17 A. I did. 18 Q. What is this report? 19 A. Maxine Rock Disposal Area Surface and 20 Groundwater Monitoring. 21 Q. The date on the front page is April 5th of 22 1984, on the cover page. Do you see that? 23 A. Yes, sir.</p>

Page 197

1 Q. At that point, had the reclamation work on
2 the post law area been completed?
3 A. I believe so, I'm not certain. I was
4 looking for a table which is in one of these
5 final reports that has a chronology in it.
6 Q. Are you still reviewing it?
7 A. Yes. I was trying to look at some of the
8 dates and monitoring about the surface water.
9 I'm just not certain all the ditches were in yet
10 at this point. I know the wells were in, but I'm
11 not sure --
12 Q. On page 2 of the document, which is
13 Drummond 151, it seems to indicate that all the
14 wells were in, it speaks of them in the past
15 tense. Is that your understanding?
16 A. Yes, sir.
17 Q. Starting on page 153, we talked about this
18 a little bit earlier, the depth of the wells and
19 the depth of the material?
20 A. Yes, sir.
21 Q. In the second paragraph, it's talking about
22 Well MO-5 which, looking at Exhibit 6, is in the
23 pre-law area north of the north ditch, correct?

Page 198

1 A. Yes, sir.
2 Q. What does it indicate there about --
3 looking at these depths of the well, how deep the
4 material was in that area?
5 A. 76 feet.
6 Q. And Well MO-6, how deep was the material in
7 that area?
8 A. 74 feet.
9 Q. And you said earlier that in the locations
10 of some of these wells, that at a certain depth
11 there was pre-law refuse, correct?
12 A. Yes, sir.
13 Q. I don't recall which ones, but you said by
14 looking at some of the borings information, you
15 could determine that. Is that contained in this
16 document?
17 A. Yes, the last paragraph on that page, MO-7
18 and MO-8.
19 Q. What about MO-7 and MO-8?
20 A. They were drilled in the capped area, but
21 they were drilled at two different depths. And
22 if you look at pages 157 and 158, it shows how
23 deep they were drilled.

Page 199

1 Q. All right, stop there. How deep was Well
2 Number 7 drilled?
3 A. 62 feet, it looks like.
4 Q. And how deep was the post law material?
5 A. 16 or 17 feet.
6 Q. And so the rest of it, from the 16 or
7 17 feet down to the full depth, would be pre-law
8 material?
9 A. That's right.
10 Q. How about for Well Number 8, which is on
11 page 158?
12 A. It looks like it was drilled to about 15 or
13 16 feet.
14 Q. Why was it so much shallower?
15 A. Because we were making a comparison of --
16 if there was water in these wells, a comparison
17 of the water quality and water level fluctuations
18 in the two wells, pre-law and post law.
19 Q. So if I'm understanding what you're saying,
20 the MO-8 was drilled due to its depth such that
21 it was only sampling from the post law material?
22 A. That's right.
23 Q. And 7, due to its depth, was sampling from

Page 200

1 the pre-law material below the post law material?
2 A. That's right.
3 Q. Would those be the only two wells where
4 there would be a layer of post law material on
5 top of pre-law material?
6 A. MW-9 was a well drilled to monitor the post
7 law, and there was only several feet of pre-law.
8 Q. What page are you looking at?
9 A. I'm sorry. 159.
10 Q. So looking at the information on 159, how
11 deep was the post law material?
12 A. About 41 feet.
13 Q. And what was the total depth of the well?
14 A. The total depth that we drilled was 45,
15 46 feet. The total depth of the well was all
16 within the post law.
17 Q. Starting on page 164, we've got some
18 monitoring data, and these sample sites, again,
19 would correspond to the ones that we see on
20 Exhibit 6?
21 A. That's right.
22 Q. It looks like the last date of sampling in
23 this batch was January 5th of 1984, which is on

<p style="text-align: right;">Page 201</p> <p>1 page 168?</p> <p>2 A. That is the last sampling date on the</p> <p>3 table.</p> <p>4 Q. For the surface water sampling for SW-2, on</p> <p>5 the first sample it's February 4th of '83, pH was</p> <p>6 4.4, and it looks like the highest reading was on</p> <p>7 January 5th of '84 at 5.55. Was that an</p> <p>8 acceptable level for pH to PELA?</p> <p>9 A. We were monitoring and reporting the data.</p> <p>10 We weren't making judgment of its acceptance.</p> <p>11 Q. Did you report the data to ABC only, or to</p> <p>12 someone else, too?</p> <p>13 A. I think ultimately the final document of</p> <p>14 all the monitoring went to the Surface Mining</p> <p>15 Commission, for certain. Progress reports were</p> <p>16 supposed to have been provided on a monthly</p> <p>17 basis, according to the program, so this data was</p> <p>18 presented to ASMC.</p> <p>19 Q. In that same document, if you would turn to</p> <p>20 page 193, this is something you mentioned</p> <p>21 earlier, I believe, some infiltration and</p> <p>22 percolation tests?</p> <p>23 A. 193, was that the page?</p>	<p style="text-align: right;">Page 203</p> <p>1 A. I did.</p> <p>2 Q. And what is it, for the record, please?</p> <p>3 A. It's a report dated October 5, 1984,</p> <p>4 entitled Maxine Rock Disposal Area Hydrologic and</p> <p>5 Water Quality Investigations.</p> <p>6 Q. Do you know if this was the final such</p> <p>7 report that was generated by PELA?</p> <p>8 A. I believe it is, because it is the only</p> <p>9 final bound document that we have in our office.</p> <p>10 Q. So you have this document in its entirety?</p> <p>11 A. Yes.</p> <p>12 Q. Is it page-for-page the same as this</p> <p>13 exhibit we're looking at?</p> <p>14 A. I haven't compared what I have in front of</p> <p>15 me, but I believe so. Yes, this is the final</p> <p>16 document.</p> <p>17 Q. Have you given the copy that PELA had to</p> <p>18 Mr. Davis?</p> <p>19 A. We scanned it and provided it</p> <p>20 electronically to him.</p> <p>21 MR. BROCK: We might want to get a copy of</p> <p>22 that, okay?</p> <p>23 MR. DAVIS: Okay. That may well be true,</p>
<p style="text-align: right;">Page 202</p> <p>1 Q. Yes, 193.</p> <p>2 A. Okay.</p> <p>3 Q. It goes through 196. If I'm interpreting</p> <p>4 it correctly, it looks like there were eight</p> <p>5 different sites picked for percolation tests. Is</p> <p>6 that correct?</p> <p>7 A. Yes.</p> <p>8 Q. And on 194, the map shows where those</p> <p>9 locations were?</p> <p>10 A. Yes.</p> <p>11 Q. And the results and data on page 196</p> <p>12 correspond to those eight locations, right?</p> <p>13 A. That's what the document says, yes.</p> <p>14 Q. That last document was one that you</p> <p>15 designated in your reference list in your report,</p> <p>16 okay?</p> <p>17 A. Yes, sir.</p> <p>18 (Whereupon, Plaintiff's Exhibit Number 36</p> <p>19 was marked for identification, a copy of which is</p> <p>20 attached to the original of the transcript.)</p> <p>21 Q. Let me show you what I've marked Exhibit</p> <p>22 36. Did you assist in the preparation of this</p> <p>23 document?</p>	<p style="text-align: right;">Page 204</p> <p>1 and you're welcome to it. I'll just have to find</p> <p>2 it.</p> <p>3 THE WITNESS: I can.</p> <p>4 MR. DAVIS: We'll find it and give it to</p> <p>5 him.</p> <p>6 THE WITNESS: Okay.</p> <p>7 Q. So in this document, pages 478 through 485</p> <p>8 contains similar format and data to the reports</p> <p>9 we saw before, right, in terms of the format, the</p> <p>10 table?</p> <p>11 A. Right, and it starts out with February 4,</p> <p>12 1983, where the pH was 4.4 that we've looked at</p> <p>13 in several other documents.</p> <p>14 Q. So it's cumulative?</p> <p>15 A. Yes, sir. And it ends with September 4,</p> <p>16 1984, so that's a year-and-a-half of information.</p> <p>17 Q. On page 485, it looks like it's</p> <p>18 September 5, 1984.</p> <p>19 A. Excuse me.</p> <p>20 Q. That's all right. I just want to make sure</p> <p>21 I'm reading the right thing.</p> <p>22 A. Did I say 4th?</p> <p>23 Q. I think so.</p>

<p style="text-align: right;">Page 205</p> <p>1 A. Okay.</p> <p>2 Q. In any event, there's no data for SW-2 at</p> <p>3 that time. I guess that means there was no flow</p> <p>4 to take a sample from?</p> <p>5 A. If you look down in the middle of the table</p> <p>6 where it says Discharge --</p> <p>7 Q. Yes.</p> <p>8 A. -- SW-1 and 2 were dry, as they were on</p> <p>9 many occasions.</p> <p>10 Q. Right. It looks like on July 6th, you had</p> <p>11 the same thing for SW-2; so it looks like, if I'm</p> <p>12 reading this correctly, the last time there was</p> <p>13 an actual sample was May 2, 1984. Is that</p> <p>14 correct? I'm on page 484.</p> <p>15 A. Yes.</p> <p>16 Q. Starting at page 489, there's a series</p> <p>17 of -- well, there are three tables that relate to</p> <p>18 surface water samples, and I understand this is</p> <p>19 basically a compilation of the data from all of</p> <p>20 the samples that were taken by PELA as part of</p> <p>21 this program?</p> <p>22 A. Tables 8 and 9 are, yes, the surface water.</p> <p>23 Table 7 is from published information.</p>	<p style="text-align: right;">Page 207</p> <p>1 MR. DAVIS: Object to form.</p> <p>2 Q. That's what it says, right?</p> <p>3 MR. DAVIS: Object to form, since I haven't</p> <p>4 objected much.</p> <p>5 Q. Double objection to the same question.</p> <p>6 A. The wells were drilled across that area</p> <p>7 to -- without looking at the well construction</p> <p>8 diagrams, they were drilled in order to monitor</p> <p>9 the deepest part of the hollow or the valley.</p> <p>10 The water that was monitored in these wells was</p> <p>11 valley fill that was saturated from recharge.</p> <p>12 I'm sorry, in the refuse rock north of the capped</p> <p>13 area would have been saturation of the refuse</p> <p>14 rock, and I think your question asked if we were</p> <p>15 monitoring the stream.</p> <p>16 Q. No. I was just asking about that language</p> <p>17 and whether I'm interpreting correctly that it</p> <p>18 means those two wells are located in the course</p> <p>19 of the buried stream?</p> <p>20 A. Those three wells were drilled in the</p> <p>21 hollow so we would have good representation of</p> <p>22 where the water may accumulate at the deepest</p> <p>23 portions of the hollow.</p>
<p style="text-align: right;">Page 206</p> <p>1 Q. And Tables 8 and 9 in the Average column is</p> <p>2 taking all of the samples that were shown in</p> <p>3 those underlying -- in Table 1 that we saw, and</p> <p>4 just tabulating an average?</p> <p>5 A. Yes.</p> <p>6 Q. Would you look at page 473? In the last</p> <p>7 paragraph on that page, it's talking about</p> <p>8 groundwater monitoring wells MO-3, 5 and 6. Do</p> <p>9 you see that part?</p> <p>10 A. Yes, sir.</p> <p>11 Q. And it says that MO-5 and 6 are established</p> <p>12 in the pre-law refuse rock upgradient from the</p> <p>13 capped area in the buried stream?</p> <p>14 A. That's what it says.</p> <p>15 Q. Do you know who wrote that language?</p> <p>16 A. I may have.</p> <p>17 Q. Does that have reference to the tributary,</p> <p>18 when it says the "buried stream"?</p> <p>19 A. Yes, the intermittent stream.</p> <p>20 Q. So from that, we would discern that these</p> <p>21 monitoring wells 5 and 6, because they were</p> <p>22 producing water, unlike 4, are thought to be in</p> <p>23 the buried stream, right?</p>	<p style="text-align: right;">Page 208</p> <p>1 Q. Okay. Was the tributary in the hollow?</p> <p>2 A. Yes, certainly.</p> <p>3 (Whereupon, Plaintiff's Exhibit Number 37</p> <p>4 was marked for identification, a copy of which is</p> <p>5 attached to the original of the transcript.)</p> <p>6 Q. Ms. George, I'm handing you Exhibit 37, and</p> <p>7 this was a document that was referenced in your</p> <p>8 reference list for your report. This is an Order</p> <p>9 from the Alabama Surface Mining Commission, dated</p> <p>10 March 14, 1985. And my question is simply, what</p> <p>11 does an administrative procedure order have to do</p> <p>12 with geology or the opinion of a scientist?</p> <p>13 A. Well, the reason we were doing all of this</p> <p>14 was to satisfy NOV's and Order.</p> <p>15 Q. To satisfy what?</p> <p>16 A. The NOV's and the subsequent consent order,</p> <p>17 or whatever the document was that was issued that</p> <p>18 was satisfied. It says it was satisfied here.</p> <p>19 Q. Okay. Are you giving an opinion on the</p> <p>20 legal meaning or effect of this Order?</p> <p>21 A. Not the meaning of it, but the effect was</p> <p>22 that the matter was addressed.</p> <p>23 Q. Are you giving a legal opinion on the</p>

<p style="text-align: right;">Page 209</p> <p>1 effect of this Order on any of the claims in this 2 lawsuit by the Riverkeeper? 3 A. No, absolutely not. I was using it as a 4 reference for the chronology, but it does 5 document, so to speak, closure of the situation. 6 Q. Closure from whose perspective? 7 A. The Surface Mining Commission's 8 perspective. 9 (Whereupon, Plaintiff's Exhibit Number 38 10 was marked for identification, a copy of which is 11 attached to the original of the transcript.) 12 Q. Let me show you what I've marked Exhibit 38 13 to your deposition. This is another document 14 that you referenced in your reference list for 15 your report. This is an ADEM letter from 1992 16 that has to do with releasing monitoring 17 requirements. Had you ever seen this letter 18 prior to being retained in this lawsuit? 19 A. No, I did not. 20 Q. How does this letter inform any opinions 21 that you have formed in this case? 22 A. It indicates granting the conclusion of the 23 responsibilities for monitoring at all the</p>	<p style="text-align: right;">Page 211</p> <p>1 from ADEM to be released from the monitoring 2 requirement. Had you ever seen this letter prior 3 to being retained in the case? 4 A. No, I had not. 5 Q. Who provided this letter to you? 6 A. I believe this was amongst the 3,000 7 documents. 8 Q. Was it attached to Mr. Brown's report? 9 A. I'm not sure. I'm not sure I've seen this 10 before. If I have, I don't recollect it. 11 Q. Are you offering any kind of legal opinion 12 about the effect of this letter on any claim 13 asserted in the case? 14 A. No, sir. 15 Q. Does this letter have anything to do with 16 any scientific opinion that you formed? 17 A. Yes, it does. 18 Q. How so? 19 A. Well, it ultimately relates to the fact 20 that Alabama Byproducts and ultimately Drummond 21 satisfied the regulatory for these regarding the 22 two violations and the subsequent investigations 23 and modifications made to drainage, and the ASMC</p>
<p style="text-align: right;">Page 210</p> <p>1 remaining outfalls, particularly outfall -- not 2 outfall -- Pond 027 associated with the basin. 3 MR. DAVIS: Are you sure you got the number 4 right? 5 THE WITNESS: 24, excuse me. 6 Q. Who provided this letter to you? 7 A. I believe it was in -- if it was in my 8 report, this was in Mr. Brown's compendium and 9 Appendix A or B to his document. 10 Q. Okay. That's your recollection, that this 11 letter was included in Anthony Brown's report? 12 A. Yes. 13 Q. Are you offering any legal opinion about 14 the end effect of this monitoring release on any 15 claim Riverkeeper is making in this case? 16 A. No. I'm using it for reference to the 17 conclusion of activities. 18 (Whereupon, Plaintiff's Exhibit Number 39 19 was marked for identification, a copy of which is 20 attached to the original of the transcript.) 21 Q. Let me show you what I've marked Exhibit 39 22 to your deposition. This is a Drummond Company 23 letter from July 7, 1992. Drummond had requested</p>	<p style="text-align: right;">Page 212</p> <p>1 permitting, and the bond releases for that 2 permitting. 3 Q. Are you offering any opinion on the legal 4 effect of a reclamation bond release on any 5 claims asserted in this case? 6 A. Not legal opinion, no, sir. 7 Q. Are you offering an opinion as an expert on 8 administrative procedures under Alabama law? 9 A. No, sir. 10 (Whereupon, at this time a short break 11 was taken.) 12 (Whereupon, at this time the deposition 13 was concluded at 6:10 p.m.) 14 FURTHER DEPONENT SAITH NOT. 15 16 17 18 19 20 21 22 23</p>

<p style="text-align: right;">Page 213</p> <p>1 C E R T I F I C A T E</p> <p>2</p> <p>3 STATE OF ALABAMA)</p> <p>4 JEFFERSON COUNTY)</p> <p>5</p> <p>6 I hereby certify that the above and</p> <p>7 foregoing proceedings were taken down by me in</p> <p>8 stenotype, and the questions and answers thereto</p> <p>9 were reduced to computer print under my</p> <p>10 supervision, and that the foregoing represents a</p> <p>11 true and correct transcript of the testimony</p> <p>12 given by said witness upon said proceedings.</p> <p>13 I further certify that I am neither of</p> <p>14 counsel nor of kin to the parties to the action,</p> <p>15 nor am I anyway interested in the result of said</p> <p>16 cause.</p> <p>17</p> <p>18</p> <p>19 /s/Donna L. Winters</p> <p>20 Donna L. Winters, ACCR #373</p> <p>21 Expires 9-30-2018</p> <p>22 Donna L. Winters, Commissioner</p> <p>23 My Commission Expires 10-10-2021</p>	

<u>WORD INDEX</u>			
< \$ >	14 13:13 129:17, 20 152:4 208:10	124:4 125:17 128:11 129:22 140:7, 9	2011 35:19 37:17 2014 98:18 2017 5:3 29:16 43:20 58:7, 13 2018 1:22 2:9 4:1 5:6 202 7:14 208 7:16 209 7:17 21 147:5, 9 210 7:19 2-11-83 7:4 212 8:3 219 168:18 22 22:22 157:14, 18 220 170:5, 6 222 171:7 22nd 151:7 23 159:23 160:4 235563 1:23 239 171:18 24 152:13 162:13, 16 210:5 241 171:22 2-4-80 6:7 24th 151:6 25 1:22 5:6 155:20 165:4 167:16, 20 252 157:3 25th 2:9 4:1 26 7:9 97:4 101:9 177:7, 10 267 169:5, 6 27 5:5 60:18 61:23 62:13 64:6 67:9 68:2 180:7, 11 27th 151:6 28 181:12, 16 282 2:8 8:14 2829 2:8 8:13 29 67:22 151:23 164:17 183:1, 5 2933 119:11 2959 119:17 2963 119:20 < 3 >
\$175 29:10 \$4,548 159:1	140 6:5 166:1, 8 145 6:7 146 6:9 147 6:10 15 3:21 15:4 131:1, 5 185:11 199:12 151 197:13 153 197:17 157 6:12 198:22 158 198:22 199:11 159 200:9, 10 16 133:16, 20 136:3 199:5, 6, 13 160 6:13 162 6:14 164 200:17 167 6:16 168 201:1 17 5:3 29:17 58:7 136:9, 13 199:5, 7 177 6:18 1798 177:12 178:3 18 97:23 98:17 140:11, 15 180 6:21 166:18 181 7:1 183 7:2 184 7:3 186 7:4 187 7:5 19 99:1, 2 144:22 145:3 191 7:7 193 201:20, 23 202:1 1938 88:5 194 7:10 202:8 1951 100:20 196 7:12 202:3, 11 1971 88:5 99:4 103:3 1975 14:2 1976 13:5 1978 20:11 23:5 116:10 1979 10:20 89:7 93:3, 10 121:14	1980 48:23 146:4 147:12 150:3 151:21, 23 152:4, 17 160:5 1980s 24:20 59:18 118:8 119:8 153:13 1981 6:14 1982 111:2 135:10 168:16 171:11 193:12 1983 7:9 153:21 189:21 190:18 196:6 204:12 1984 20:11 71:22 82:18 135:5 178:1 196:22 200:23 203:3 204:16, 18 205:13 1985 208:10 1988 3:21 1990s 34:12 50:6 1992 185:11 209:15 210:23 1993 20:3 1994 20:3 < 2 > 2 88:1 96:19, 23 99:2 103:4 141:6 146:12 158:16 168:20 169:7 182:12 184:2 189:9 197:12 205:8, 13 2.9 190:7 2:16-CV-01443-AK K 1:3 20 100:17 145:22 146:2 2000s 50:19 2002 18:10 2003 83:2 2004 83:2 2006 34:17 2009-2010 33:7	2011 35:19 37:17 2014 98:18 2017 5:3 29:16 43:20 58:7, 13 2018 1:22 2:9 4:1 5:6 202 7:14 208 7:16 209 7:17 21 147:5, 9 210 7:19 2-11-83 7:4 212 8:3 219 168:18 22 22:22 157:14, 18 220 170:5, 6 222 171:7 22nd 151:7 23 159:23 160:4 235563 1:23 239 171:18 24 152:13 162:13, 16 210:5 241 171:22 2-4-80 6:7 24th 151:6 25 1:22 5:6 155:20 165:4 167:16, 20 252 157:3 25th 2:9 4:1 26 7:9 97:4 101:9 177:7, 10 267 169:5, 6 27 5:5 60:18 61:23 62:13 64:6 67:9 68:2 180:7, 11 27th 151:6 28 181:12, 16 282 2:8 8:14 2829 2:8 8:13 29 67:22 151:23 164:17 183:1, 5 2933 119:11 2959 119:17 2963 119:20 < 3 >

3 60:12, 15 130:4
 138:22 139:2
 146:12 158:18, 18
 159:12, 19 177:17
 178:18 179:2
 189:10
3,000 211:6
30 9:5 28:12, 15
 68:11 147:12
 160:5 165:12, 19,
 21 184:16, 19
30th 171:11
31 68:18 71:8
 186:19, 23 190:18
3-10-80 6:9
32 72:1 164:12
 168:11 187:14, 18
3254 168:12
33 191:17, 20
34 164:23 165:1,
 22 194:5, 9
35 16:16 29:2, 3
 72:1 165:4 196:10,
 14
35209 8:22
35222 8:19
35233 2:9 8:14
35405 10:3
3542 184:20
36 73:14 74:6, 10,
 23 202:18, 22
37 74:9 208:3, 6
373 213:20
37th 8:18
38 74:12 75:2
 209:9, 12
39 74:12 210:18,
 21
 < 4 >
4 51:13 100:20
 107:13 146:17, 21
 149:16 170:6
 179:2 180:19
 189:21 204:11, 15
 206:22
4,000 53:9
4.3 156:4, 9
4.4 189:22 190:1
 201:6 204:12

40 29:2, 3 57:19
 75:4 166:18
405 169:6
40-hour 19:17
41 75:4 140:17
 200:12
42 75:4
4-22-83 7:5
43 77:4, 7
430 188:5
433 189:12
434 190:16
44 77:4
45 5:10 77:4
 200:14
4-5-84 7:12
46 77:14 78:4
 200:15
473 206:6
478 204:7
48 78:12
480 156:21 157:8
484 205:14
485 204:7, 17
489 205:16
4th 201:5 204:22
 < 5 >
5 3:19 82:19
 107:13 146:13, 13
 148:19 179:2
 180:19 203:3
 204:18 206:8, 21
5.55 201:7
50s 120:1
51 78:12
52 78:21 156:22
 157:1
53 78:21
54 80:4
55 156:15, 16
59 5:5 60:18 80:4
5th 196:21 200:23
 201:7
 < 6 >
6 63:1, 5 64:5, 23
 72:15 76:14 80:9
 83:16 84:21 89:9
 91:23 93:5 98:13

100:14 105:9
 106:16 107:14
 108:6 111:8
 112:12, 15 113:3,
 18 123:10, 10
 129:22 131:10
 132:5 137:15
 144:19 146:13, 13
 147:21 154:8, 14
 155:19 178:11, 13,
 14 179:2 180:18,
 19 188:1, 3, 13
 189:19, 22 193:18
 196:6 197:22
 200:20 206:8, 11,
 21
6:10 212:13
60 5:5 57:18
60s 102:19, 22
 120:2
62 199:3
63 5:8
6th 124:4 205:10
 < 7 >
7 34:21 46:23
 83:6, 10 85:5 87:6,
 12 93:6 96:9
 110:7 112:15, 18
 114:13 126:17
 132:4 137:15
 138:21 146:13, 18
 147:21 155:14
 170:18 178:11, 12,
 20 179:4, 5 182:15
 184:2 199:2, 23
 205:23 210:23
70 107:9
70s 10:17 120:2
71 98:18 102:19,
 21
712 8:18
7-21-92 7:17
7-26-83 7:7
7-30-80 6:10
7-30-82 6:16, 18
74 198:8
75 107:9
750 148:13

751 150:23 151:14
752 151:19
753 151:22
754 152:3
755 149:6, 18
 151:10
7-5-79 5:13
76 107:11 198:5
7-7-92 7:19
78 24:22 116:22
79 48:23 91:4
 93:14 124:19
 125:7
7th 59:2, 14 60:21
 < 8 >
8 31:17 45:9, 13
 116:7 128:21
 146:14 155:23
 158:5 159:1, 7
 178:20 179:4, 6
 199:10 205:22
 206:1
80s 10:18 11:22
 58:15 63:17 64:20
 119:3 153:19, 19
 176:6
82 48:23 63:17
 107:19 185:12, 13
8-21-79 5:17
8-26-82 7:1
827 136:21 137:2
83 5:9 48:23
 63:18 69:14
 107:19 111:3
 187:5 201:5
832 141:6
834 141:20
84 10:20 23:5
 24:22 69:14 71:23
 84:9 91:4 111:23
 125:7 174:8 201:7
85 28:23 69:14
 71:23 84:9 111:23
8-6-79 5:14
88 153:21
 < 9 >
9 8:3 47:10
 115:22 123:10

154:8 158:5 178:18, 21 179:4 193:18 205:22 206:1 9:50 2:10 90 28:23 90s 26:14 27:18 9-30-2018 213:21 96 5:4 < A > a.m 2:10 abandoned 106:8 144:14 abandoning 169:14 abatement 145:8 146:8 abbreviate 88:16 abbreviating 88:17 ABC 23:15 25:17 26:6 69:23 71:14 81:7, 12 82:8 86:3 91:9, 10 106:23 159:10 161:18, 19 166:23 167:11 168:15 173:11 177:14 182:12 183:11 185:16 190:23 193:20 194:23 195:3 201:11 ability 138:4 able 158:6 Absolutely 118:9 194:16 209:3 accept 44:6 54:9 159:13, 17 acceptable 201:8 acceptance 128:12 201:10 accepted 146:13, 14 155:1 accompanied 59:5 accomplished 182:22 ACCR 213:20 accumulate 126:8 207:22 accumulated 156:6	accurate 10:21 45:15 61:2 100:3 107:10 141:8 accurately 128:1 accused 34:3 achieve 190:23 193:5, 21 acid 142:21 143:4, 12, 17, 22 144:8 145:7, 13 acquired 82:22 164:3 acronym 51:10 Act 173:15 acting 9:2 126:1 ACTION 1:3 50:9, 16, 21 161:19 190:2, 9 213:14 active 117:6, 8 168:20 169:7 176:1 activities 21:13 37:11 39:18 40:20 41:2 82:11 95:2 134:17 175:23 178:1 210:17 activity 21:7 39:21 100:22, 23 actual 155:11, 12 191:11 205:13 add 145:19 added 46:19 Addendum 6:18 addition 27:13 additional 45:17 46:10, 15 163:14 167:9 170:22 additions 69:9 address 9:22 10:1 143:8 148:8 addressed 182:19 208:22 addressing 141:4 143:6 193:10 ADEM 7:8, 17 50:2, 13, 13, 14, 22 51:3 81:15 194:13 196:5, 9 209:15 211:1	ADEM's 49:18 adjacent 39:5, 18 adjoining 37:13 adjust 158:4 adjustment 110:21 181:3 Administration 156:7 administrative 50:8 208:11 212:8 advance 60:10 adverse 39:19 advised 4:3 advisement 50:12 Advisory 49:19 aerial 5:4 17:7, 17 18:3, 4 72:9 82:22 97:1, 9 100:19 101:11, 16 affiliated 24:23 59:10 agencies 104:11 106:13 111:6 194:3 agency 167:4, 7 ago 63:23 64:1 75:17 agree 120:8 141:7 160:17 162:4 AGREED 2:2 3:1, 8, 16 agreement 54:4 192:12 ahead 45:12 48:7 63:4 79:7 83:9 96:22 aids 17:9 air 17:2, 4, 13 airshafts 175:23 ALABAMA 1:2 2:6, 9 3:19 6:18 8:14, 19, 22 9:2, 3, 5 10:2, 7 14:11, 16 15:3, 10, 17, 18 18:7, 15 20:6 21:11 22:4, 23 23:15 32:17, 17 33:3, 4, 23 34:3 35:13 48:5, 17 49:6 81:15 85:10	94:11 97:11 149:10 156:14, 14, 17 159:16 175:13 208:9 211:20 212:8 213:3 alleged 34:6 allow 71:2 alluvial 62:2 alongside 100:13 alterations 69:8 alternative 146:20 alternatives 146:7, 8, 13, 14 amended 3:20 American 16:7 184:1 amount 28:22 66:5 72:12 106:6 138:3 139:21 140:4 141:15 158:3 analyses 151:2 analysis 67:15 130:20 151:13 175:9 176:12 Andreen 8:13 169:5 angle 68:3 annual 156:1, 22 answer 27:22 67:6 69:4 86:23 102:18 121:2 122:21 141:11 148:18 167:2 176:16 177:1 answered 52:13 95:13 145:16 answering 35:6 answers 213:8 Anthony 210:11 anybody 71:17, 20 anymore 48:21 anyway 68:23 75:6 128:3 178:2 anywise 213:15 apart 189:1, 6 apologize 60:9 98:23 apparently 123:19 181:3 187:10
--	---	--	--

<p>appear 74:12 77:4 78:12 151:12</p> <p>appearance 117:16</p> <p>appearing 8:14, 19, 22</p> <p>appears 12:15 68:4 124:19 128:12, 14 187:7 189:14</p> <p>appendices 52:15</p> <p>Appendix 13:12 210:9</p> <p>applicable 52:3 194:1</p> <p>Application 6:17, 20 44:22 135:10, 11, 18 166:10 167:23 168:3, 8, 16 171:4</p> <p>applications 25:10</p> <p>applied 70:15</p> <p>appreciate 19:13 74:7</p> <p>appropriate 67:3</p> <p>approved 169:23 170:1</p> <p>approximate 74:5, 6 75:2 80:8 87:17 93:6</p> <p>approximate, 88:21</p> <p>approximately 101:21 111:2 189:5</p> <p>April 100:20 151:21 196:21</p> <p>aquifer 38:14 75:23 76:7, 8, 10 137:12, 15 138:23 139:10, 16 155:16</p> <p>arbitrary 98:6</p> <p>archives 37:21</p> <p>Area 5:18 6:1, 11, 15, 23, 23 7:5, 12, 14 16:18 21:8, 18 24:12, 18 38:13 46:4 57:1 59:20 62:1, 6 64:6, 9, 10, 22 65:1, 2, 3, 5, 12, 15, 16, 17, 18, 19 66:1, 11 67:10</p>	<p>68:1 69:1 70:6 72:22, 23 73:1 74:16 75:20 77:12, 13, 20, 22 78:3, 13, 17 79:15, 16 80:11, 21 82:3 89:17, 18, 20, 21, 22 90:12 91:16, 19, 20, 22 92:1, 17, 18 93:2, 4, 7, 9, 22 94:4, 22 95:18, 21 96:1, 3, 4, 8, 17 98:9, 12, 15 99:6 100:2 101:1, 2 102:3, 4, 5 106:17 107:1, 13, 15, 18 108:8 109:16, 16 110:4, 5, 6, 16, 18, 23 112:2, 5, 6, 6, 13, 19, 20 113:17, 17 114:21, 21 117:6, 8, 17, 19, 21, 22, 23 118:7, 10, 15 120:21 121:2 122:10 126:2, 7, 11 132:9, 12, 19 133:2, 3 137:18, 22 138:13 139:4, 6, 6 141:18 144:5, 7 148:16, 21 152:8, 9, 14, 22 153:5, 7 156:8, 11, 13 158:19, 20 159:5 162:2 163:16 165:5 167:10 168:20, 21 169:7, 8, 8, 9, 14, 22 170:7 171:1 172:13 173:4, 18 174:9, 15, 18, 20, 22, 22 175:18 176:4, 13, 22 177:18, 19 179:7, 7, 8, 22 180:17, 23 190:17, 21 193:3, 10, 11, 11, 14, 21 195:15 196:19 197:2, 23 198:4, 7, 20 203:4 206:13 207:6, 13</p> <p>area, 180:21</p>	<p>areas 16:20 21:2 25:6 40:22 41:16 67:2 78:1 80:23 94:3 108:4 120:7 176:1</p> <p>arrived 117:15 120:10</p> <p>arrow 65:9 80:13 88:4, 11</p> <p>arrows 83:21 86:8</p> <p>art 13:23</p> <p>ascertain 131:19</p> <p>asked 167:8 171:19 175:16 207:14</p> <p>asking 12:2 27:20 80:1 93:1 97:19 104:15, 16 109:22 117:19 123:3 207:16</p> <p>ASMC 171:3 194:2 201:18 211:23</p> <p>aspect 132:3 167:9</p> <p>aspects 14:15 23:13, 23 26:4 48:16 50:4 56:21</p> <p>asserted 211:13 212:5</p> <p>assess 51:14 138:14</p> <p>Assessment 6:14, 22 11:2 21:13 25:5</p> <p>assessments 26:20</p> <p>assign 3:12</p> <p>assigns 145:8</p> <p>assist 202:22</p> <p>Assistance 22:23</p> <p>assisted 22:20 23:1 196:15</p> <p>associate 59:6</p> <p>associated 16:23 22:8 41:2, 11 66:16 93:12 150:19 158:3 210:2</p> <p>Associates 12:19 16:4 17:16</p>	<p>assume 151:16 182:18</p> <p>assumed 135:19</p> <p>astounded 72:5</p> <p>Atmosphere 156:7</p> <p>attached 6:4 12:10 13:12 45:11 52:20 53:5 60:14 63:3 83:8 96:21 116:1 121:6 123:15 127:13 128:8 129:19 131:3 133:18 136:11 140:13 145:1 146:1 147:7 157:16 160:2 162:15 167:18 177:9 180:9 181:14 183:3 184:18 186:21 187:16 191:19 194:7 196:12 202:20 208:5 209:11 210:20 211:8</p> <p>attain 19:1</p> <p>attempted 47:1</p> <p>attempting 141:10</p> <p>attention 40:23 41:1 61:11</p> <p>attorneys 10:5 135:13</p> <p>attribute 62:20</p> <p>attributed 39:5</p> <p>auditor 19:17, 19</p> <p>augmentations 69:9</p> <p>augmented 174:5</p> <p>August 124:4 151:6</p> <p>author 63:21</p> <p>authorities 20:21</p> <p>Authority 38:12</p> <p>authorized 125:21 129:6 167:13</p> <p>Avenue 2:8 8:13</p> <p>Average 206:1, 4</p> <p>aware 140:7 152:17, 20 153:12 176:6 193:20 194:3</p>
--	---	---	---

<p>AWIC 106:13 122:19 123:9 154:11 163:7 194:2 195:18</p> <p>< B ></p> <p>bachelor's 13:20</p> <p>back 11:20, 22 19:11 34:23 35:18 52:5 83:23 92:21 120:4, 5 121:14 128:20 131:17 135:6, 7 145:2, 15 149:16 150:18 152:17 153:3 157:6 165:22 176:6</p> <p>background 13:18</p> <p>backhoe 91:13</p> <p>backside 104:3</p> <p>backside, 104:4</p> <p>bacteria 75:11</p> <p>bales 104:9</p> <p>bank 164:7 168:21</p> <p>Bankhead 22:6</p> <p>Barry 3:22 8:12 10:4</p> <p>based 16:11 48:8 56:8 114:7 120:9 128:20 137:6 154:19, 22 155:12, 18 158:1 159:4 172:21 182:10</p> <p>basically 19:7 109:22 148:16 165:18 169:9, 17 205:19</p> <p>basin 25:14 59:16 62:2 71:4 79:3, 16, 16, 19, 21, 23 84:14 86:1 113:18 153:18 170:13, 15, 17, 22 184:9 188:14 210:2</p> <p>basins 89:11, 13</p> <p>basis 52:15 142:16 175:5 201:17</p> <p>batch 200:23</p> <p>Bates 5:5 31:23 52:9 169:4</p>	<p>Bates-stamped 32:3 52:22 97:3 136:21 170:6</p> <p>Bay 33:19</p> <p>Bbrock@selcal.org 8:15</p> <p>beach 138:11</p> <p>bear 12:6</p> <p>bedrock 62:19 73:16 75:8, 14 129:2, 10, 14, 16</p> <p>behalf 31:7</p> <p>belabor 194:8</p> <p>believe 15:4 16:12, 14 17:10 18:18 20:3 21:16 22:1, 6, 20 24:11 27:7 29:19 34:9, 19 38:6 39:11 42:3 48:15, 20 50:1 52:14 53:7, 16 54:6 56:22 59:11 61:15 63:16 67:20 69:10 71:7 72:20 74:11 75:14 76:10 77:17, 21 78:3, 15 80:3 82:22 84:10 87:17 91:13 97:2, 18 98:1, 18 99:9 105:2 107:11 113:11 115:5 119:2 124:16, 18 138:9 139:5 148:1 149:10 150:4 152:10 153:18 163:2 167:5 170:21 171:5, 15 177:13, 23 185:23 192:9 193:22 194:2 196:9 197:3 201:21 203:8, 15 210:7 211:6</p> <p>belonging 36:16</p> <p>berm 182:16</p> <p>best 57:21 63:18, 19 64:2 76:11 131:18 161:23 163:8 178:23</p> <p>better 60:10 84:21</p>	<p>87:20 109:4 128:4</p> <p>bill 29:7</p> <p>billed 57:5</p> <p>billing 29:11 54:2</p> <p>bills 57:8</p> <p>Birmingham 2:8 8:14, 18, 22 9:2</p> <p>bit 19:4 60:8 61:20 85:1 188:14 197:18</p> <p>BLACK 1:5 8:17 10:5 138:20, 21</p> <p>black-and-white 100:19</p> <p>blinds 12:22</p> <p>blue 86:8, 15 87:5, 13, 21, 22, 23 94:15</p> <p>blurry 77:7</p> <p>boat 60:1 163:20</p> <p>bodies 100:12</p> <p>bond 212:1, 4</p> <p>books 27:7</p> <p>boot 75:5</p> <p>boring 107:7 179:21</p> <p>borings 198:14</p> <p>borrow 174:2</p> <p>bottom 86:8 145:6 168:19 192:5</p> <p>bound 203:9</p> <p>boundaries 176:23</p> <p>boundary 175:19 176:14</p> <p>branch 50:14</p> <p>break 49:11, 15 61:5 92:6, 19, 22 144:20 145:2 177:5 212:10</p> <p>breaker 183:8, 17</p> <p>brief 54:12</p> <p>bring 61:11 88:11 158:22</p> <p>Brock 3:22 8:3, 12 9:18, 20 10:4 11:9 34:16 55:10 92:7 98:20 140:16 203:21</p> <p>Brookwood 8:21 24:17</p> <p>brought 98:20</p>	<p>Brown's 31:8 52:16, 21 53:6, 17 56:22 210:8, 11 211:8</p> <p>Bruce 6:5 140:20</p> <p>bucket 11:12, 13</p> <p>Buffalo 13:22 15:9</p> <p>build 39:23</p> <p>building 182:16</p> <p>built 40:1</p> <p>bump 29:2</p> <p>buried 94:7 206:13, 18, 23 207:19</p> <p>Byproducts 23:15 85:10 94:11 149:11 175:13 211:20</p> <p>By-Products 6:18</p> <p>< C ></p> <p>cable 163:22</p> <p>cables 164:1</p> <p>Cahaba 23:2 25:15</p> <p>calculating 51:6 163:18</p> <p>calculation 51:18 155:2, 17 157:3, 9</p> <p>calculations 154:15, 18 155:14, 21, 23</p> <p>calendar 29:4</p> <p>call 12:18 72:21 86:12 88:14 89:18, 22 98:2 148:11</p> <p>called 51:8, 12 62:1 64:14 66:13 76:22 77:1 80:9 90:15 114:7, 9 142:8 143:7 165:5</p> <p>calling 67:7 114:10</p> <p>camera 73:7, 8, 9, 10</p> <p>Canaan 38:21</p> <p>cap 174:2, 13</p> <p>capabilities 19:22</p> <p>capacity 10:12 90:23</p> <p>Capped 6:22 65:16 72:23 73:1 78:17 89:21 94:4</p>
---	---	---	--

95:19 96:3 98:9 106:17 107:15, 17, 18 108:2, 4 110:4, 6, 16 112:19 113:17 114:21 117:17 139:7 169:8, 9 172:13 173:18 174:9, 22 177:19 179:22 180:17, 20, 23 195:15 198:20 206:13 207:12 capping 107:23 110:12 178:21, 23 179:5 capture 75:9 90:9 133:2 captured 108:22 112:4, 10 113:16 114:20 capturing 74:14 care 15:15 cartoon 79:5, 6 105:11 113:18 case 10:9 12:14 24:9 27:9 29:11, 14 30:3, 15, 21 31:4 32:1 33:2, 8, 15, 16 34:5, 8, 10, 17 35:21 36:3, 12 37:2, 4, 6, 10, 19 38:5, 8, 10, 19, 21 39:2, 7, 10 40:3, 9, 18, 19 41:22 42:6, 17 43:3, 12, 15, 18, 22 44:7, 13, 15, 21, 22 45:5, 15, 18, 22 46:5, 11, 18 47:8 53:8 54:2, 14, 21 55:1, 18 56:6, 13 57:6 62:2 78:18 97:13 115:15 119:5 141:17 175:17 209:21 210:15 211:3, 13 212:5 cased 179:7 cases 32:13, 16 33:1 35:8, 14, 18	38:4 42:12 46:12, 22 47:1 catastrophic 140:2 catch 71:4 catching 113:19 catchment 126:2 cause 9:8 37:12 213:16 causing 39:19 CD 5:7 CEA 19:20 Center 2:7 8:11 certain 15:4 19:8, 22 40:22 46:8 73:2 87:19 97:8 103:15 105:15 109:5 117:13 122:16 123:1 133:15 138:3 146:12 154:3 156:5 163:1 174:10 190:20 192:18, 21 194:16 197:3, 9 198:10 201:15 certainly 21:9 57:18 96:8 111:21 120:13 138:3 142:15 147:15 160:21 208:2 certainty 134:3 187:11 certificate 16:9, 10, 15 certification 19:21 20:7 46:1, 2, 6 certified 19:10, 16, 19 certify 9:4 213:6, 13 challenges 186:12 change 110:15 118:4 142:1 changed 66:2 69:10, 11 110:3, 9 142:7 changes 103:22 104:16 channel 79:22 112:9 172:11	characterization 120:9, 13 characterize 94:9 120:15 chemicals 41:6 51:15 chemistry 131:20 165:19 190:10 193:19 Chetopa 22:6 184:5 Chicago 42:20 chief 20:10, 15 57:2 Christina 8:13 chronological 136:7 181:11 chronology 107:20 187:4 197:5 209:4 church 39:4 Cindy 61:11 Circle 10:2 99:12, 16 102:3 circled 103:5 circuit 186:8 citation 32:19, 23 cited 136:4 City 15:14 32:23 35:12 37:11 40:9 CIVIL 1:3 3:20 9:5 claim 210:15 211:12 claims 209:1 212:5 clarification 19:13 clarify 42:15 class 19:22 46:1, 2, 4, 6 classes 14:16 classify 144:3 clay 65:21 138:9 140:4 170:9, 11 clay-type 91:2 Clean 173:15 cleaned 91:5 161:21 clean-up 51:19 clear 95:14 cleared 40:1 94:23	170:2 clearing 39:23 clearly 95:8 client 33:22 clients 20:20 26:23 Clifton 7:17 close 18:12 74:23 78:5, 7 86:12 168:12 closed 42:4 closest 62:10 146:20 close-up 68:12 closure 41:21 209:5, 6 club 45:1 Coal 6:17, 20 16:22, 23 17:1 20:11 21:21 22:8 23:2, 12 25:15 26:8, 8 27:3, 4 47:20 66:1, 3, 5, 5, 6, 10, 18 168:20 184:1, 3, 4, 4, 6, 15 coarse 66:22 68:22 Cobb 22:8 cognizant 153:4 colleagues 15:12 collect 172:11, 13 185:6 collected 77:11 130:5 150:15 151:4 183:11 185:22 color 101:11, 20 colorized 101:19 column 189:17 206:1 come 59:8 67:9, 14 83:23 131:17 153:15 156:4 comes 21:9 162:10 Coming 52:5 73:18, 20 173:16 commencing 2:10 commingle 82:5 commingling 80:19 182:17 Commission 48:2, 5, 16 49:3, 6 81:13,
--	---	--	---

<p>14 121:23 122:15, 19 123:2 140:20, 23 141:3 159:17 193:13 201:15 208:9 213:23 Commissioner 2:5 3:18 9:2 213:22 Commission's 209:7 Committee 49:19, 21 50:7, 11 51:3 compact 173:21 companies 21:14 22:18 23:1, 5 24:23 25:12 COMPANY 1:8 7:19 10:8 24:6 25:1 26:8 48:17 49:6 71:18 195:1 210:22 compare 154:5 166:2 compared 28:1 154:9 183:20 203:14 comparing 154:8 155:4 165:18 comparison 94:22 165:12, 20 174:15 179:11 199:15, 16 comparisons 191:12 compendium 52:18 70:21 152:15 210:8 compensated 49:4 Compensation 53:21 compilation 205:19 compiled 191:5 compiling 188:22 Complaint 29:18 complete 12:13 20:2 128:11 completed 69:19 71:22 113:14 167:4 174:7, 12, 12 177:2 182:5 186:8 190:14 191:13 197:2 completion 65:22</p>	<p>compliance 3:5 81:2, 8 complies 47:12 52:8 61:4 65:8, 11 74:8 75:3 78:5 80:16 88:23 92:14 99:17, 19 101:8 102:7 108:19 111:16 114:18 133:21 component 18:2 61:18 132:3 155:6, 8 159:8 183:13 components 41:17 128:2 147:15, 16 158:5 composition 65:23 comprise 64:23 comprising 68:22 computation 159:11 computer 51:5 213:9 concentrations 148:20 concept 166:9 conceptual 169:20 170:23 conceptually 166:9 concern 161:17 conclude 39:7 concluded 212:13 conclusion 192:19 209:22 210:17 Conclusions 6:4 136:20 137:2 concrete 80:4 condition 160:12 Conditions 6:22 186:11 191:11 conductance 163:22 164:9 165:21 166:1, 6, 15, 15 conducted 100:22 130:14 conductivity 138:2, 6, 11 confidential 23:9</p>	<p>configuration 69:10 108:23 172:22, 23 confirm 178:4 confirming 128:12 confused 85:2 87:22 connection 20:14 31:3 121:11 123:20 136:16 168:16 181:10 191:23 consent 208:16 consider 16:17 23:8 143:22 considered 179:17 consisted 137:8 consistent 109:8 127:9 182:9 constituents 41:7, 8 51:19 154:10 constitute 142:6 constructed 59:17 84:5 85:9 88:8 102:12 147:18 152:18 161:2 169:23 187:6, 10 construction 85:13 153:18 174:11 207:7 consultant 51:4, 7 consultants 27:1 51:5 55:8 consultation 26:23 consulting 175:13 contact 83:4 126:6 contain 57:8 contained 100:3 141:16 198:15 contains 178:14 204:8 contamination 26:19 33:18 34:7 39:3, 8 41:10, 13 43:5, 8, 15 46:4 content 169:15 184:11 contents 143:19 context 117:11 148:5, 15</p>	<p>continue 107:1 159:4 Continued 41:19 continuing 14:19 17:22 18:1 contoured 174:19 contouring 82:3 112:13, 16, 22 contracted 21:15, 18 122:3 contracting 20:19 contractor 85:10 91:10 contracts 48:14 contract-type 54:7 contribution 81:17 172:18 control 81:5 117:6 conversation 192:7 196:3 convert 156:20 convey 79:14 conveyors 176:1 Cook 5:14, 17, 19, 21, 23 6:2, 3, 9, 12, 13 7:2, 3, 10 82:14 128:13, 23 129:5, 10 137:11 148:7 159:10 167:5, 8, 11 178:7 Cook's 159:15 cooperative 81:11 coordinated 17:15 106:12 coordinates 73:7 184:21 coordinating 111:5 coordination 20:20 25:19 81:13 104:11 copies 37:14, 15, 22, 23 134:21 copy 12:9, 13 13:12 37:18 45:10 60:13 63:2 83:7 96:20 115:23 121:5, 21 123:14 127:12 128:7 129:18 131:2 133:17 136:10</p>
--	---	---	---

140:12 144:23 145:23 147:6 157:15 160:1 162:14 167:17 177:8 180:8 181:13 183:2 184:17 186:20 187:15 191:18 194:6 196:11 202:19 203:17, 21 208:4 209:10 210:19 core 128:18, 21, 23 coring 129:2, 4 corner 79:4 corporate 34:1 Corporation 6:19 correct 10:9, 18 13:6 18:7 20:12, 13 26:11 31:17 37:8 42:18 43:12 44:18 45:3, 20 46:13, 14 52:23 78:22 83:18 99:21 110:19 113:10 115:3 124:21 132:18 147:3 149:15, 17 151:11, 20 152:1, 5 165:20 172:13, 14 181:2 188:11, 16, 22 189:15, 23 190:7 197:23 198:11 202:6 205:14 213:11 corrective 50:15, 21 correctly 49:2 150:22 202:4 205:12 207:17 correlate 165:23 correlation 143:23 correspond 151:10 180:18, 21 189:18 200:19 202:12 correspondence 173:13 corresponding 123:21 corrugated 78:23	cost 41:1, 17 48:12, 13 159:1 costs 41:10 158:4 counsel 2:3 3:10, 11 5:7 9:6 55:18 213:14 counter-sign 54:9 country 45:1 counts 14:19 County 22:7 36:9 82:21 213:4 couple 23:1 26:5 30:4 108:1 135:8 169:12 course 17:21 19:17 20:2 207:18 courses 14:10, 12 17:5 93:18 COURT 1:1 3:6 4:4, 5 9:1, 15 36:7 44:6 45:6 47:6 courtroom 37:6 cover 16:20 65:21 92:12 120:21 170:8 174:4 177:22 196:22 covered 21:17 22:1 74:17 77:13 103:8 118:15 133:3 created 137:13 credit 15:2 creosote 34:7 criteria 174:3 cross 80:12 cross-over 59:19 80:8, 18 115:1 174:11 cross-sections 154:19 cubic 155:18, 22 cull 52:11, 18 53:12 culvert 78:23 115:5 cumulative 204:14 Cunningham 39:17 curiosity 72:10	current 13:15 21:13 40:20 50:3 106:20 currently 27:2, 7, 23 28:3, 8 127:3 159:3 customers 48:15 cut 101:14 < D > D.R 5:19 7:10 daily 156:23 dam 62:7 68:21, 22 69:9, 12, 21 70:8, 15, 18 71:6 72:21 76:15 77:16, 21 84:14 86:9 88:8 89:17, 18, 20 90:21 93:20 94:12 99:13 103:8, 22 104:3, 18, 21 105:13, 14 106:5 132:15, 16, 17 133:3, 5, 11 137:19, 19, 20 138:17, 18 140:3 147:18 149:20, 22, 23 150:7 165:16 194:22 dam , 62:9 damages 37:13 dams 70:3 89:8 93:13 102:11 103:6 131:13 132:22 Dan 56:18 darker 65:12 dash 88:2, 2, 3 111:12 113:5, 10 dashed 80:12 108:7, 12 114:12 data 137:7 139:9 142:3 151:3 154:5 155:13 183:19 185:23 188:22 200:18 201:9, 11, 17 202:11 204:8 205:2, 19 date 9:4 17:23 18:11 34:15 35:19	57:4 58:6, 12 63:15 101:12 107:21 137:3 145:8 191:5 196:21 200:22 201:2 dated 100:20 116:10 128:10 129:22 146:3 147:12 154:23 160:5 203:3 208:9 dates 35:3 151:3, 20, 22 154:3, 20 189:15 197:8 DAVIS 8:20, 21 9:16 11:4 32:10, 11, 14 34:13, 15, 17 36:23 45:13 55:6, 13 59:6 60:16 67:5 69:3 76:21 86:22 92:5 97:2 98:22 116:6 120:11 122:20 135:9, 14 140:18 143:5 153:6 155:3 159:14 160:20 162:7 174:16 176:15 203:18, 23 204:4 207:1, 3 210:3 Davis's 59:7 day 2:9 4:1 14:15 68:9, 10 157:7, 10 159:1 days 28:21 dealing 158:16 deals 163:2 180:12 decades 124:8 December 116:10, 22 160:5 185:11 decision 106:14 declined 47:7 deconstruct 84:23 deemed 179:20 deep 109:7 198:3, 6, 23 199:1, 4 200:11 deeper 179:9, 16 184:4 deepest 207:9, 22
--	--	---	--

DEFENDANT 1:9 8:23 38:18, 19, 20, 22 39:13, 14, 17 40:10 42:23 44:15 defense 43:13 55:17 define 23:21 143:17 defined 109:3 definition 143:22 defunct 50:18 degree 13:20 14:9, 23 15:6 delivering 3:22 demonstrate 129:5, 8 191:7 demonstrates 166:12 denied 46:1 Dense 41:19 Department 81:16 depending 20:21 28:14 141:23 depends 98:5 120:2 162:8 depict 80:4 depicted 67:23 68:19 87:9, 18 94:18 depicts 64:7 DEPONENT 212:14 deposited 67:2 140:3 DEPOSITION 1:21 2:4, 11 3:3, 4, 14, 17 12:12 33:8 35:22 37:6, 16, 18 40:12 44:18 57:4 83:11 96:23 116:19 119:1 121:8, 12 129:21 131:5 136:17 140:17 146:3 157:18 162:17 183:5 184:15 187:1, 18 192:1 196:14 209:13 210:22 212:12	depositions 3:7 30:2, 5, 10 35:20 37:14 49:14 deposits 16:23 depth 105:18 106:1 107:3 109:8 163:21 164:8 165:7 179:15, 19 197:18, 19 198:10 199:7, 20, 23 200:13, 14, 15 depths 198:3, 21 describe 54:16 69:21 100:15 128:1 137:21 138:5 141:10 169:12 described 110:22 161:17 194:17 describes 122:8 124:4 172:2 180:13 describing 143:13 DESCRIPTION 5:2 46:17 47:18 196:5 design 69:20 70:2, 20 79:8 81:19, 20, 22 82:6 173:22 designate 189:8 designated 85:5 88:15 138:19 189:9 202:15 designation 18:9, 21 19:2, 6 detail 23:11 26:1 84:1 detailed 5:22 details 178:5 determination 76:6, 9 81:6, 7 determinations 151:16 determine 11:12 51:18 67:16 78:11 164:5 198:15 determined 155:19 determining 51:6 develop 145:12	developed 41:1 55:17 deviated 104:12 devote 28:1 diagram 79:4 84:22 114:7 165:22 166:8 diagrams 116:3 133:14 189:4 207:8 difference 19:4 49:7 155:6 191:7 different 17:8, 9 18:22 19:5 23:23 36:20 40:4 41:5 64:15 65:19, 23 66:4 67:2 68:2 70:11, 12, 13 75:16, 21 78:10 107:6 118:7 151:3 154:20, 23 155:4 158:5 166:5 181:23 184:4, 7, 8, 13 189:14 198:21 202:5 differently 176:22 difficult 11:11 73:3 78:10 difficulty 95:5 Dildine 124:13, 14 Dillard 8:18 dimension 155:10 dimensions 103:6 155:9 Dimova's 31:10 direct 85:12 140:5 directing 134:17 direction 82:5 83:22 105:8 110:8 directly 24:13 disagree 141:9 discern 206:20 discernation 103:2 discernible 95:11 Discharge 5:15 70:6 71:5 103:17 113:14, 22 114:22 122:9 150:6 152:7, 21 190:4 193:2 205:6	discharging 142:22, 23 158:23 discovered 11:23 discovery 32:1 discuss 169:23 discussed 163:7 172:10, 15 182:6 195:11 discusses 138:22 discussing 145:4 163:5 170:7 185:15 discussion 56:21 116:8 121:17 146:22 163:9 171:22 192:23 193:5 194:13 discussions 82:12 108:3 144:10 167:6 173:10, 12, 16 192:8 194:19 195:1, 3, 8, 10, 14, 17, 19 Disposal 5:18 6:17, 20, 23 7:5, 12, 14 21:8 59:20 80:21 91:19, 20 92:17, 18 93:2 94:3 99:5 100:23 101:2 106:20 109:16 126:13 152:9, 22 153:7 163:16 167:10 169:8 173:3 176:1, 4 177:18 190:17 193:10, 14 196:19 203:4 dispose, 132:1 disregarded 86:4 distinction 96:2 127:2, 3 DISTRICT 1:1, 2 10:7 disturbance 95:8 disturbed 99:8 122:10 ditch 59:17, 18 77:10 82:4 84:1, 2, 2, 2, 19 86:19 96:9, 14 100:13 108:5, 8,
---	--	--	---

<p>10, 15, 20 109:13, 17 110:14, 19, 22 111:8, 15, 17 112:3, 11, 11 113:3, 8, 13, 16, 22 114:2, 4, 6, 8, 13, 19 117:23 174:10, 18, 19 187:6, 9 188:8, 15, 18 190:21 193:2 197:23 ditches 5:9 81:21 82:2 84:5, 11 85:4, 7, 13, 17, 21 86:3 101:23 102:4, 5 108:7 146:16, 23 147:1 169:16 182:23 188:22 197:9 diversion 108:8 146:15, 23 147:1 169:16 193:2 DIVISION 1:2 15:22 20:11, 15 50:2 DNPL 41:19 document 42:7 53:9, 11 54:7, 11 66:13 83:10, 12 100:18 101:10 116:9 117:11 120:5 121:9 123:2 129:21 131:5 136:3, 13, 23 140:14 141:20 146:5 148:23 149:6, 8 150:22 153:17 154:2 157:19, 23 160:4, 6 162:20, 22 163:2 164:12 168:4, 19 170:6 171:8, 8, 12 177:11 178:4 180:12 181:17 183:6 185:9 186:22 187:19 188:6 189:12 197:12 198:16 201:13, 19 202:13, 14, 23 203:9, 10, 16</p>	<p>204:7 208:7, 17 209:5, 13 210:9 documentation 125:18 127:10 131:14 documented 134:6 137:10 148:6 documenting 187:22 documents 11:16, 20 12:5 31:21 32:4, 6 46:9 52:10, 11, 12, 19, 22 53:3, 5, 10, 12, 17 55:2 56:20 70:17, 21, 22 75:22 76:3 77:3 81:11 97:3 103:1 106:11 107:20 115:7, 9 121:19 123:17 130:1, 14 134:18 137:10 152:16, 23 162:18 167:20, 23 178:1 181:7 204:13 211:7 doing 11:19 24:1 49:9 123:20 186:12 208:13 Donna 2:5 3:21 9:1 213:19, 20, 22 door 61:13 double 13:22 207:5 Doug 5:14, 17, 21, 23 6:2, 3, 9, 12, 13 7:2, 3 82:14 134:14 148:7 167:5 Down-dip 180:20 downgradient 161:14 188:14 downriver 70:7 down-slope 96:10 132:14, 17 Dr 14:17 77:2 125:19, 23 127:6 132:6 133:20 134:13 140:19 142:20 148:1, 7 157:21 158:2</p>	<p>161:4 171:16 181:22 draft 12:16 47:16 171:14 drafted 172:4 drafting 136:19 draftsman 15:21 Drahozal 17:11 drain 79:17 82:4 108:4, 22 109:17 110:13 112:3 113:13 114:19 173:23 174:19 Drainage 6:15 59:17, 18 68:7, 12 69:6 70:9 73:17 77:11, 20 79:10, 18, 22 80:20 81:20 82:6 83:22 84:13, 19 86:11 93:18 98:11, 14 100:7, 11 103:19 108:9 112:9 138:23 143:1, 4, 8, 12, 17, 22 144:4, 8 148:16 149:23 150:2, 8 172:18 211:23 drained 110:1, 16, 18 113:21 114:23 draining 110:22 193:3 drains 84:16 draw 65:8 75:1 80:13 drawing 79:8 84:1 111:9 114:2, 11 drawn 87:7 126:16 137:3 drew 98:5 100:14 drill 128:18 drilled 107:6 129:13 179:6, 8 185:5 198:20, 21, 23 199:2, 12, 20 200:6, 14 207:6, 8, 20 drillers 20:19 drilling 128:16, 22 129:1 133:4</p>	<p>155:13 drive 32:7 91:23 DRUM 31:22 D-R-U-M 31:22 DRUMMOND 1:8 7:19 10:7 24:6, 10, 13 25:1 32:3 52:9, 12, 21 53:11, 17 71:18 116:10 119:1 134:19 197:13 210:22, 23 211:20 Drummond's 135:12 dry 205:8 due 199:20, 23 duly 9:12 duplicate 135:15, 17, 23 dust 66:6 duties 20:14 Dwight 7:20 dynamics 131:22</p> <p>< E > earlier 52:14 78:9 86:6 91:15 93:5 104:1 117:2 127:18 145:6 149:22 154:7, 11 165:14 167:2 172:11 175:17 182:6 189:23 193:17 195:16 197:18 198:9 201:21 early 10:18 26:14 29:21 50:6, 19 63:17 93:15 100:13 102:19 118:8 120:2 125:14 154:4 194:21 earn 15:3 16:9 earthmoving 109:3 162:1 east 84:1, 19 85:5 101:22 108:10, 15 109:17 110:19, 22 113:22 117:16, 23,</p>
--	---	--	---

<p>23 172:11 174:22 188:18 eastern 22:7 93:19 Ebenezer 36:14, 15 ecology 26:10 edge 76:16 edition 13:15 editor 15:21 educated 159:22 education 14:8, 19 17:22 18:1 educational 13:18 Edwards 82:14 effect 3:4 6:14 153:21 179:5 208:20, 21 209:1 210:14 211:12 212:4 effective 3:20 effects 39:20 efficient 160:21 161:1 effluent 122:10, 13 123:5 153:8 effort 80:22 efforts 17:15 eight 18:20 146:7, 10, 10 181:23 182:4 202:4, 12 eighties 153:3 either 23:3 32:7 35:9 48:13 69:18 85:10 101:13 139:22 180:19 190:14 elaborate 21:5 electronic 37:15, 22 electronically 32:8 203:20 element 129:8 Elements 6:21 125:19 127:19, 22 elevated 158:13 166:14, 14 elevation 155:7 elevations 155:5 eleven 22:21 127:21 133:23 eliminate 161:6, 11</p>	<p>e-mail 32:7 embankment 86:12 embayment 147:18, 19 emergency 150:9 employed 163:18 employees 71:14 ended 15:16 46:7 169:17 ends 152:4 204:15 engaged 39:21 engagement 55:8 engineer 79:7 engineering 70:2 engineers 49:22 71:14 173:11 enlargement 79:3 80:1 ensure 182:13 entailed 49:20 entering 166:13 entire 32:23 64:9 72:7 75:20 179:22 entirety 67:12, 13 137:17 203:10 entities 24:23 entitled 203:4 environment 26:10 184:15 Environmental 2:7 8:11 17:1 19:17, 19, 23 20:8 25:5 26:20 49:23 81:16 environments 184:8 EPA 51:17 ephemeral 87:2, 3 94:5 equipment 109:3 162:2 era 134:21 eroded 62:14, 15 90:6 96:18 120:8, 14, 16, 17 eroding 90:13 erosion 39:19 especially 149:10 Esquire 3:22 Essentially 19:3 68:1 110:13 118:2</p>	<p>established 50:20 120:22 122:16 125:12 163:13 164:7 166:20 184:6 206:11 establishing 163:18 establishment 118:14 estimate 29:5 41:14, 18 57:11, 17, 18, 21 58:3 62:22 155:15 estimates 41:1 106:2, 6 estimation 101:20 131:18 estuary 132:8 Eva 8:17 evaluated 159:9 evaluating 179:4 evaluation 20:1 137:6 158:1 evaluations 26:21 event 124:3 162:10 177:20 191:4 205:2 events 11:17, 22 182:11 everybody 143:6 everybody's 63:19 145:15 evidence 3:14 100:10 evidences 100:8 evolved 125:5 exactly 149:19 exam 19:15 20:4 EXAMINATION 8:2 9:8, 20 19:18 examined 9:12 example 18:22 exams 19:12 excavate 91:11 excavated 91:5 excavation 41:15 exception 84:13 excluded 46:23 47:4</p>	<p>Excuse 28:5 55:5 75:12 204:19 210:5 exercise 167:1, 12 EXHIBIT 5:2 12:8, 11 45:9, 12 60:12, 15 63:1, 5, 5 64:5, 23 65:14 67:23 72:14 76:14 80:9 83:6, 10, 16 84:21 85:5 87:6, 11 89:9 91:23 93:5, 6 96:9, 19, 23 98:13 99:2 100:14 103:4 105:9 106:16 108:6 110:6 111:8 112:12, 15 113:3 114:13 115:22 116:7 121:4, 7 123:13, 16 126:17 127:11, 14 128:6, 10, 21 129:17, 20 131:1, 4, 10 133:16, 19 136:3, 9, 12 137:15 138:21 140:11, 15, 16 144:22 145:3, 22 146:2 147:5, 8, 21, 21 157:14, 17 159:23 160:4 162:13, 16 167:16, 20 170:18 177:7, 10 178:14 180:7, 11 181:12, 16 183:1, 4 184:16, 19 186:19, 23 187:14, 17 188:1, 3, 13 189:19 191:17, 20 194:5, 9 196:10, 14 197:22 200:20 202:18, 21 203:13 208:3, 6 209:9, 12 210:18, 21 exhibits 4:2 30:9 89:3 132:4 178:11 exist 109:5 existed 77:23 existence 41:9, 12</p>
---	--	---	--

84:8 90:1 111:17 expanded 105:5 expenses 56:11 experience 16:11, 13 17:3 18:17 19:8 experiencing 39:4 43:5 Expert 5:3 10:9, 23 11:5, 12 12:14 29:14 31:6, 12 33:12, 15 36:1, 12 37:23 38:3 40:5, 6, 7 42:13 44:6 46:20 47:7 53:15 55:3, 21 97:13 123:18 131:6 162:19 167:21 181:8 212:7 expertise 57:1 Expires 213:21, 23 explain 72:3 116:4 128:19 148:4 155:16 163:17 explanation 65:6, 9 86:16 explanatory 164:13 exposed 68:22 75:20 84:16 exposure 51:15 Express 43:7, 9 expression 84:17 extensive 25:13 extent 87:19 140:9 155:11 165:3 166:7, 16, 17 < F > face 77:10 facilitated 110:7 facility 41:4, 6 42:2, 4 fact 11:1, 6, 13 44:9 65:20 85:20 93:11 161:3 167:7 170:3 177:20 211:19 facts 11:7 factual 10:13 faculty 14:18	fair 11:2 29:5 88:20 fall 29:15, 16 familiar 64:17 66:23 67:7 76:2 83:12 143:15 157:18 162:19 169:14 fan 62:3 far 96:10 106:21 135:6, 7 164:20 182:21 189:1 farm 39:6 fashion 79:5, 6 feature 70:3 features 83:17 89:6 February 45:19 151:7 187:5 189:21 201:5 204:11 federal 36:7 feel 44:2 feet 107:9 129:15 156:4 161:5 164:2, 7 165:4 166:18, 18 170:11 189:5 198:5, 8 199:3, 5, 7, 13 200:7, 12, 15 few , 135:3 field 14:13 16:19 23:2, 12 25:15 26:8 60:3 137:7 151:15 fieldwork 134:4 Figure 5:8, 9 63:9 79:20 80:9, 10 83:11 113:18 156:9 figures 154:15 filed 4:4 153:1 192:3 files 28:16 134:20 filing 3:17 fill 93:17 94:7, 13 95:14 100:3 141:18 148:9 154:21 158:19, 21 159:1 207:11 filled 126:12 132:8	161:4 fills 162:11 filter 70:18 71:1, 5, 9 194:21 filter , 194:15 final 109:18 135:5 172:23 177:23 197:5 201:13 203:6, 9, 15 find 97:22 131:17 133:10 135:3 192:15, 22 204:1, 4 fine 18:13 28:7 36:22 55:13 65:10 85:3 91:1 102:6 116:4 finer 66:6 67:1 finished 111:22 Fire 38:11 firm 36:20, 23, 23 51:23 54:2, 5 59:7 first 9:12 13:17 15:18 16:22 23:7 25:20 33:2 35:11 37:4 42:9, 16 43:22 44:9, 13 57:15 58:18 61:23 62:13 85:6 89:7, 8 93:10 94:8 96:4, 10 103:7 104:13, 14, 22 105:17 106:18 108:7 120:10 124:5 128:15 129:22 131:7 137:12 141:6 152:20 158:7 172:7 180:14, 16 183:19 185:9 187:21 201:5 fit 174:3 five 16:11 18:17 35:20 flat 118:2 flesh 11:10 flip 28:6 119:4 flood 140:2 floods 140:8 Floor 8:21	Florida 18:23 19:2 45:2 130:18, 22 FLORIE 8:20 flow 100:6, 9 142:13, 15 150:19 157:9 205:3 flowing 75:6 100:7 144:12 fluctuations 199:17 focused 48:12 folder 167:22 folks 125:13 195:17 follow 158:2 following 9:9 145:3 152:3 follows 9:13 follow-up 177:14 foot 59:22 170:9 174:1, 1 force 3:4 foregoing 9:6 213:7, 10 forest 59:19 forested 72:10 84:22 forestry 72:13 Fork 62:10 68:21 79:20 90:10 113:21 126:12 132:9 140:2 143:2 166:13 form 3:11 17:3 67:5 69:3 76:21 86:22 120:11 122:20 143:5 153:6 155:3 159:14 160:20 162:7 174:16 176:15 207:1, 3 formal 14:8 178:6 format 204:8, 9 formation 38:16 74:10 75:14, 18, 19 137:14 185:6 formatted 54:11 formed 76:1 136:6 209:21 211:16 forth 55:18, 23 169:15
--	--	---	---

<p>forward 51:18 173:1</p> <p>found 43:19</p> <p>four 26:7 72:1 78:18 84:3 85:4, 7 86:3 130:4 164:2 180:14</p> <p>fourth 142:20 160:8 194:12 195:11</p> <p>frame 25:4 28:8 100:19 121:18</p> <p>framework 115:18</p> <p>Fredonia 13:21 15:11</p> <p>frequent 142:16</p> <p>frequently 141:2</p> <p>front 58:6 196:21 203:14</p> <p>full 3:5 9:21 90:17, 18, 20 160:18 199:7</p> <p>function 79:12 80:17 160:19 162:6</p> <p>FURTHER 3:1, 8, 16 41:1 74:3 75:1 95:18 161:3 212:14 213:13</p> <p>< G ></p> <p>gallons 155:22 156:20, 21 157:3, 7, 8, 9</p> <p>gas 15:12</p> <p>gather 186:2</p> <p>gathered 25:11</p> <p>gathering 185:20</p> <p>gauge 142:16</p> <p>gauges 186:6</p> <p>gauging 141:21 142:4, 7, 14</p> <p>General 17:1 37:9 39:15 77:5 78:13 83:22 92:4 152:14</p> <p>Generally 33:14 36:11 38:9 59:13 128:1 146:23 156:14</p>	<p>generated 142:3 177:13 203:7</p> <p>generating 31:3</p> <p>Geologic 5:20 22:13 25:12 66:14, 16</p> <p>Geological 15:17, 23 17:10</p> <p>geologist 18:6, 14, 23 57:2</p> <p>Geologists 16:8 17:12 18:1 49:22 126:23</p> <p>geologist's 17:11</p> <p>geology 13:20, 23 14:9 16:19 184:14 208:12</p> <p>geomorphologist 17:7</p> <p>geomorphology 17:2</p> <p>geophysical 24:11</p> <p>GEORGE 1:21 2:4, 11 5:10 9:7, 11, 23 10:4 20:9 29:13 35:8 46:22 49:11 61:7 86:19 92:21 99:20 102:10 116:9 127:15 136:14 180:10 184:19 186:22 196:13 208:6</p> <p>getting 150:5</p> <p>Gilbert 5:11</p> <p>give 19:5 33:8 35:22 41:9 44:3 55:14 57:23 59:9 63:15 115:18 131:18 138:1 204:4</p> <p>given 121:21 167:3 203:17 213:12</p> <p>gives 133:22</p> <p>giving 32:23 208:19, 23</p> <p>glass 98:21</p> <p>go 10:15 11:19 12:5 14:21 16:3</p>	<p>23:10 35:18 36:3 45:12 48:7 60:1 63:4 79:7, 19 83:9 96:22 98:10 100:11 116:2 129:14 135:6, 7 139:16 151:22 155:22 186:2</p> <p>goal 145:15</p> <p>goes 34:23 84:18 108:13 202:3</p> <p>going 10:15 11:9, 13 12:18 15:12 28:13 46:5 55:11 63:4, 6 64:4 66:12 83:23 87:23 88:4, 18 89:1 92:2, 10 98:2 102:5 106:14 115:7 119:2 127:4 132:8 135:20 139:3 145:20 160:22 161:12 162:6 170:8 179:11 182:8 194:4, 9</p> <p>Good 9:21 11:18 22:12 49:16 93:1 108:12 207:21</p> <p>GPS 73:7, 11</p> <p>graded 110:5</p> <p>grading 190:13, 16, 18</p> <p>graduate 14:1, 10</p> <p>graduated 15:11</p> <p>grandfathering 19:11</p> <p>granting 209:22</p> <p>gray 103:5</p> <p>great 12:20</p> <p>greater 28:17</p> <p>greatly 161:6</p> <p>Green 56:18</p> <p>Green's 57:1</p> <p>grew 14:6</p> <p>ground 62:13 72:11 111:6 118:16 144:12 155:12</p> <p>grounds 3:13</p>	<p>Groundwater 7:6, 13 21:20 26:19 38:15 39:3 41:20 43:5 49:19 50:2, 14 129:9 131:19 137:13 149:14 176:19 178:8 185:6, 20 196:20 206:8</p> <p>group 50:16 51:3, 8 53:5</p> <p>growing 74:18 118:13</p> <p>grown 72:7</p> <p>guess 16:22 20:17 28:11 33:17 58:2 65:14 81:1 86:12 87:4, 6 94:14 100:4 117:14 134:8 140:1 143:1 159:11 187:3 205:3</p> <p>guesstimate 58:1</p> <p>gullied 118:3</p> <p>< H ></p> <p>hand 45:12 64:4 134:7</p> <p>handed 116:9 167:19</p> <p>hanging 128:9 129:20 136:12 187:17 208:6</p> <p>handle 148:10, 14</p> <p>handled 131:23</p> <p>handwritten 122:9 192:6, 16</p> <p>happen 106:11, 15 111:7 161:1 170:14</p> <p>happened 11:22 69:13 95:7 111:2 177:20 182:11</p> <p>happening 140:7 185:17</p> <p>happy 55:7, 14</p> <p>hard 49:7 98:1</p> <p>hardwoods 118:19</p> <p>harm 36:14</p> <p>Harvest 38:8, 11, 13</p>
---	--	--	---

Hattiesburg 40:9, 18, 22 hay 104:8 heading 172:8 headwaters 96:12 98:4 hearing 33:10 height 103:14 105:13 142:1, 16 heights 118:14 held 106:5 help 34:15 97:18 105:10 116:3 128:5 helped 25:9 helpful 35:4 helping 134:5 helps 55:6 105:11 Hercules 40:21 41:4 Hicks 7:20 30:6, 12, 14 66:22 71:20 140:17 high 14:5 138:5, 8, 10 143:18 148:20 higher 184:10 highest 201:6 highlighting 72:2 highly 120:17 hired 122:4 125:17 127:19 145:11 Historic 5:4 55:4 97:1 historical 10:14 11:16 40:19 103:1 181:9 historically 67:18 116:14 hit 129:16 hold 105:21 106:3 138:4 holding 130:17 hole 129:1 holes 128:18, 22 hollow 76:11, 18, 19 84:17 87:1 93:17 94:13 127:9 207:9, 21, 23 208:1	honest 34:14 177:15 hope 92:22 hopefully 11:10 133:10 hoping 115:17 hour 29:7, 10 157:7 hourly 54:19 56:8 hours 15:2 56:9, 16 57:5, 9, 14, 19, 19, 22 House-Pearson 61:12 hug 84:15 hummocky 73:3 hydraulic 22:13 138:2, 6 hydrogeologic 46:3 hydrogeologist 134:16 hydrogeologists 126:23 hydrogeology 14:13 16:23 Hydrologic 5:20 6:22 7:15 176:12 203:4 hydrology 177:17 < I > idea 72:18 identification 12:9 45:10 60:13 63:2 83:7 96:20 115:23 121:5 123:14 127:12 128:7 129:18 131:2 133:17 136:10 140:12 144:23 145:23 147:6 157:15 160:1 162:14 167:17 177:8 180:8 181:13 183:2 184:17 186:20 187:15 191:18 194:6 196:11 202:19 208:4 209:10 210:19	identify 64:3 73:11 147:9 Illinois 42:18 43:23 44:1, 4, 10 illustrating 157:22 158:22 illustration 92:6 imagine 154:9 impact 38:16 44:10 176:8 impede 44:10 implemented 146:11, 21 167:5 169:18 impounded 90:5 93:16 impoundment 71:2, 3 impoundments 70:4 improve 190:3, 10 Improvement 81:14 159:16 inches 156:15, 16, 22 157:1 include 31:8 41:12, 14, 18 56:10 included 21:12 25:16 31:11 70:21 88:6 210:11 includes 35:1 including 194:3 incorrect 115:4 increased 66:10 incrementally 164:10 indicate 40:3 88:5 102:23 107:7 113:7 141:1 143:10 145:21 160:13 184:12 187:4 189:14 192:9 197:13 198:2 indicated 175:18 indicates 16:8 18:5 20:10 37:5 45:18 84:22 99:8 138:16 149:1 160:8 164:18 165:11 172:10	183:21 184:10 188:7 189:21 190:6, 13 209:22 indicating 113:12 117:22 132:4 indication 138:2 indicative 75:10 indicators 113:12 individual 44:23 52:10 82:10 individual's 61:10 industry 15:13 infill 106:6 infiltration 83:21 86:17 88:1, 3 108:1 138:1, 17 201:21 inform 209:20 information 10:14, 14 25:11 34:20 45:18 46:10, 15, 17 48:3, 11 55:4 73:11 153:9 168:15 171:2 181:11 185:7, 21 192:6 198:14 200:10 204:16 205:23 informed 141:3 in-house 14:18 initial 58:5 109:18, 19, 20 132:2 133:7 193:12 initially 107:5 110:1 114:23 129:11 144:9 initiated 190:17 initiatives 50:8 input 81:12 inspected 186:11 Inspection 5:12 7:8 182:8 192:10 inspections 192:19 installation 179:3 installed 25:10 111:20 142:5 178:9, 15, 18, 20 installing 141:21 179:4
---	---	--	--

<p>instance 11:1 47:3, 6 73:19 Institute 16:7 institutes 15:16 instruction 54:20 instructor 14:14 instrumentation 186:12 Intent 29:22 interested 11:21 213:15 interim 135:8 interject 11:4 intermittent 87:2, 3, 5, 9 88:6, 19 93:6 94:7, 15 96:18 98:4 126:17 206:19 internal 50:12, 13 147:11 193:5 interpretation 17:2, 4, 13 18:3 55:3 interpreting 150:22 202:3 207:17 interstitial 141:7 intervals 164:8 interviews 48:9 introduce 158:11 inventory 25:13 invested 57:22 investigate 21:19 Investigations 7:15 21:12 69:19 70:14 137:7 144:10 192:20 203:5 211:22 invoiced 57:14 invoices 56:5 involve 21:7 27:3 involved 25:21 56:12 173:12 192:8, 10, 23 194:18 195:13 196:8 involving 24:9 iron 75:11, 11 122:17 123:11 148:20 154:9 193:22</p>	<p>irreparably 36:14 issue 34:4 issued 29:23 121:23 163:12 208:17 issues 17:1 82:9 182:9 item 38:7 39:12 128:21 137:12 139:2 147:17 148:19 149:16 155:14, 19, 23 159:19 161:17 177:17 items 52:9 127:21 133:23 182:4 its 24:7 57:5 69:10 71:3 103:10, 11, 14 105:1, 18 110:11 130:11 134:21 137:17 141:23 160:19 161:13 168:16 199:20, 23 201:10 203:10 < J > Jack 5:12 82:12, 20 Janice 44:14 January 6:14 151:6 200:23 201:7 Jefferson 82:21 213:4 Jim 17:11 JOB 1:23 15:18 Joe 192:13 195:20 jog 115:19 Johnson 173:11 Johnson's 31:9 Johnston 8:12 joined 134:15 judgment 201:10 July 7:9 147:12 152:4 171:11 205:10 210:23 JUNE 1:22 2:9 4:1 59:2, 14 60:21</p>	<p>jury 43:19 < K > Karst 38:14 keep 37:23 60:3 141:2 159:7 Keith 8:12 Kellerman 24:12, 15 K-E-L-L-E-R-M-A-N 24:17 Key 7:7 kin 213:14 kind 25:8 49:7 101:17 104:12 118:19 128:22 211:11 kinds 130:1 kjohnston@selcal.org 8:16 knew 129:16 Knob 22:6 Knoll 32:20, 22 35:11 37:4, 13, 16 K-N-O-L-L 32:22 know 11:11 13:2 25:2 28:2 29:20 30:14, 17, 20 35:18 36:8 41:23 43:18 46:7, 16 49:10, 13, 15 53:10 57:7, 14 63:13, 22 69:13 70:18, 22 71:13 86:19 90:23 91:8 92:2 93:15 94:10, 23 95:4, 6, 9 96:12 101:14 102:10, 16 103:6 104:21 105:16, 18, 20 106:1 107:3 108:2 111:4 113:10 114:17 115:16 117:7 118:11, 18 119:14, 22 120:12 121:21 122:14, 22 133:5 135:6 136:1, 4 137:23 138:7 143:9 144:4 145:14 148:13, 18 151:13 152:15</p>	<p>153:22 154:3, 8 156:9, 14 161:22 163:1, 11 165:6, 7 167:3 168:22 169:22 170:10, 11, 20 171:2 173:12 174:11, 23 175:20 177:1, 11 181:16 183:22 189:1 192:13 194:20 195:1, 2, 6, 7, 12 196:15 197:10 203:6 206:15 knowledge 12:1 16:18 115:13 166:19 174:21 194:17 known 60:10 < L > lab 61:17, 19 97:10 130:11, 15, 16, 22 label 99:17 102:5 labeled 79:2 126:17 169:7 laboratory 130:18 151:17 Lakeland 130:18 Lamoreaux 12:19 14:17 16:4 17:16 77:2 124:21 125:20, 23 127:6 132:7 133:20 134:13 140:19 142:21 146:4 148:7 157:22 158:2 161:4 171:17 181:22 Lamoreaux's 148:1 land 99:8 172:22, 23 landfills 43:14 lane 89:2 language 126:3 148:1 206:15 207:16 Large 2:6 9:4 21:18 43:11 88:3 larger 52:12</p>
---	---	---	--

late 10:17 34:12 134:3	161:19 181:22 182:6, 7 185:10, 13 194:10, 18, 23 195:7, 11 209:15, 17, 20 210:6, 11, 23 211:2, 5, 12, 15	202:15 208:8 209:14	long 16:1, 15 18:9 26:13 27:16 55:9 63:23 64:1 159:6 163:22 164:2
lateral 155:11	letters 148:2 178:7	listed 16:6 20:23 35:10, 15 37:5 38:4, 21 46:22 51:16 53:4 85:4 123:18 127:21 131:6 136:23 167:21 181:7 182:3	longitude 184:21
latest 151:23	letting 106:8	listing 45:15	long-term 48:13
latitude 184:21	level 51:16 141:23 142:19 158:8 160:9 186:5 199:17 201:8	literature 144:9	look 12:12 28:15, 16, 21 31:9 35:2 54:11 60:23 61:8 70:10, 11, 16 75:4 93:9 97:7 99:1 100:10 102:8 104:13 106:18 107:8 110:6 117:20 118:7 119:11 125:22 129:9 131:4 133:19 135:16 149:5 153:17 157:17 164:12, 17, 23 165:20, 22 166:4 168:18 178:3 179:21 180:10 181:15 183:4 188:5 189:13 190:12 194:11 196:15 197:7 198:22 205:5 206:6
law 2:6, 7 8:11 36:20 64:17 65:17, 18 66:9 67:10 72:22 77:20, 23 79:15, 16 80:11, 20 82:3 96:2 107:17 109:22 113:17 170:7 172:17 179:6, 7, 12 193:11, 21 197:2 199:4, 18, 21 200:1, 4, 7, 11, 16 212:8	levels 51:19 158:8 166:5	litigation 27:9, 11, 12, 16 28:1, 23 29:6 34:22 42:15	looked 15:15 53:1 60:22 70:12, 20 72:8 73:19 89:6 94:10 95:1, 1, 7, 9, 10 103:4 120:16 135:1, 2 139:8 145:5 156:12 165:14 204:12
laws 3:5	license 19:1	little 11:11 19:4 26:2 60:8 61:20 74:3 84:23 98:1 113:11 118:1, 10 126:10 188:14 197:18	Looking 20:22 24:21 34:21 48:16 50:23 57:16 65:13 68:21 71:8 74:10 75:6 77:6, 12 80:5 97:17 98:23 100:16 101:12 103:1 106:7 120:5 124:1, 16 129:10 131:22 148:13 149:18 150:18 154:2 164:22 169:6 184:19
lawsuit 10:6 42:14 44:3 82:16 153:1 192:3 209:2, 18	licensed 18:6, 14	located 137:16 149:19 150:10 207:18	
Lawyer 82:14	licensure 19:12	Location 5:8 43:10, 11 72:20 74:13 75:16 78:16 80:8 85:17, 20 88:1 94:18 101:4 119:23 120:3 131:8 133:12 165:13 179:13	
layer 74:17 118:15 200:4	lifts 173:21	locations 73:6 83:20 107:6 108:2 131:14 143:11 144:2 183:12 184:13 189:19 198:9 202:9, 12	
layered 73:16	lighter 65:2	Locust 62:10 68:21 79:19 90:10 113:21 126:12 132:9 140:2 143:2 166:13	
layers 73:21	likewise 144:13	logged 94:23	
lays 146:7	lime 104:9	logging 24:11	
leading 3:11	limestone 70:15, 18, 23 71:5, 9 104:2 194:15, 20	logs 107:7 179:21	
leave 71:2	limit 85:6 140:4	LOIS 1:21 2:4, 11 5:10 9:7, 11, 23	
led 51:3	limitations 122:11, 13, 16 123:5 153:9 154:12, 13	Lois's 11:5	
Lee 184:2, 2, 3, 6	limited 56:16 139:6, 13 166:16, 17		
left 65:14 82:19 84:8 174:8	limits 154:6, 9		
left-hand 79:4	Lincoln 33:1 35:12 37:11		
legal 175:6, 9 208:20, 23 210:13 211:11 212:3, 6	line 73:4 80:11, 12 86:8, 15 87:5, 7, 14, 16, 23 92:15 93:23 94:15 108:8, 13 111:12 113:5, 5, 6, 10 114:3, 12 124:9		
legislative 50:8	Liquids 41:20		
length 105:4	list 18:20, 23 19:14 22:12 25:3, 7, 19 31:19 35:17 38:7 41:7 50:15 51:17 53:4 115:11 123:18 131:6 162:18 167:21, 21 181:7 182:3		
lengthened 105:6, 8			
Leslie 59:6			
Letter 5:14, 17, 19, 21, 23 6:2, 3, 5, 9, 12, 13 7:1, 2, 3, 4, 10, 17, 19 29:23 54:7, 8, 10, 12 55:8 124:3, 7, 20 127:15 128:10 133:20 140:19 146:3, 7 148:7 159:21			

188:13 197:4, 22 198:3, 14 200:8, 10 203:13 207:7 looks 17:18 18:20 44:17 46:10, 12 65:13 78:21 83:16 115:2 149:21 150:12 152:3 158:15 178:6 180:23 181:19 182:1 185:10 188:13 199:3, 12 200:22 201:6 202:4 204:17 205:10, 11 lot 11:20 12:5 17:17 28:5 49:13 55:21 64:15 71:14 83:16, 17 115:10 140:3 183:22 184:10 195:7 Louisiana 15:14 low 143:7, 11, 18 144:16 lower 59:16 62:2, 5, 7, 9 68:20 69:7, 21 70:18 74:22 76:15 79:4 84:14 86:9 88:8 89:17, 19, 20 90:1 93:12 99:13 102:11 103:8, 22 104:18 105:23 126:10 132:15, 15 137:19 138:17 139:14, 23 140:1, 1, 3 149:3, 20, 22, 23 165:16 166:13 170:22 174:10 183:22 192:20 194:22, 22 lowered 164:10 lunch 92:19, 22, 22 < M > M1-1 164:16 M-2 149:18 150:5 165:13, 13, 19 M-4 150:10, 15, 19 ma'am 18:16 27:21 28:4 77:9	88:22 99:2 102:10 109:14 magnifying 98:21 maiden 124:10 main 187:3 maintained 40:1 maintenance 182:14 major 13:22 128:2 majority 59:20 62:23 64:12 171:16 makeup 129:9 making 76:6 191:12 199:15 201:10 210:15 Mallard 10:2 management 20:18 81:16 manager 125:3 manganese 123:11 193:23 manganese, 148:21 manmade 84:11 85:7 86:7 manner 155:1 159:7 172:16 map 87:7, 8 88:16 98:17 99:3, 5, 12 102:19 103:3 131:14 133:11 138:16 149:9 164:13 168:23, 23 169:3, 6, 6 182:2 202:8 mapped 87:1 mapping 96:15 mappings 17:14 maps 5:4 17:8 87:1, 18 88:5 94:16, 16, 18 97:1, 18 100:1 147:23 155:1 March 146:4 151:21 190:18 208:10 mark 60:9 78:4 101:7 113:7 189:8 marked 12:9, 11 31:22 45:10 60:13, 15 63:2 83:7, 10	93:4 94:6 96:20, 23 115:23 118:23 121:5, 7 123:14, 16 127:12, 14 128:7, 9 129:18, 20 131:2, 4 133:17, 19 136:10, 12 140:12, 15 144:23 145:3, 23 146:2 147:6, 8 151:10 157:15, 17 160:1, 3 162:14, 16 167:17, 19 177:8 180:8, 11 181:13, 16 183:2, 4 184:17 186:20, 23 187:15, 17 191:18 194:6 196:11, 14 202:19, 21 208:4 209:10, 12 210:19, 21 marker 92:8 market 47:20 Mary 184:2, 2, 3, 6 Massey 50:1 master's 14:22 15:6 material 41:15 62:12, 17 64:12, 14 65:18, 19 66:4, 11, 14, 17 67:8, 17 76:2 90:17, 19, 20 91:2, 12 94:8 100:3 105:20 107:1, 3, 9 119:22 120:1, 16 126:1, 7, 8, 13 137:21 138:9 139:11, 16 140:4 141:15 154:22 164:14 172:12 174:2, 3 179:16, 16 197:19 198:4, 6 199:4, 8, 21 200:1, 1, 4, 5, 11 materials 31:2 91:1 148:9 material-wise 102:17 matter 33:14 77:5 176:9, 11, 17 208:22	matters 27:2 28:9 29:6 35:1 maximum 107:12 Maxine 5:12, 15, 18, 20 6:1, 6, 11, 15, 19, 23 7:5, 8, 12, 14, 18, 20 21:8 22:4, 16 23:16 24:9 25:6, 21 27:3 52:1 58:9 69:17 87:9 100:22 135:11 143:21 151:4 153:13 156:10 166:20 173:3 178:15 183:20 184:1, 11 185:2 196:19 203:4 Maxine's 168:11 McDuff 5:12 82:12, 20 117:1 120:6 McRoy 7:18 mean 26:22 28:5, 9 42:14 62:9 63:22 85:17 89:12 97:22 102:21 104:4 122:2 126:5 127:2, 6 138:8 141:14, 17 144:6 147:19 148:4, 15 159:12 166:10 175:6 176:20 186:9 194:8, 21 meaning 208:20, 21 means 85:22 141:15 176:17 188:20 205:3 207:18 meant 128:19 148:10 measure 141:22 142:1, 12, 15 163:21 measured 143:11 164:9 measurement 155:12 165:7 measurements 144:2 164:10
---	--	---	---

measuring 150:6
meet 30:12 143:21
meeting 196:5, 7
meetings 195:8, 10
 196:8
member 49:18
Memo 7:7 147:11,
 13 148:3 150:3
Memorandum 5:11
 6:10
memory 89:1
 115:17, 19
mention 49:18
 70:17
mentioned 104:1
 130:13 189:23
 193:17 201:20
mentions 47:19
 145:7
Messrs 8:12
met 30:16 50:2
metal 142:9
meter 163:22
meters 164:1
methodology
 163:17
methods 14:13
 17:8 130:17
MI-1 164:16, 18, 20
 165:8, 9, 12, 19, 21
mid 27:18 58:15
 153:19, 19
middle 64:10
 123:23 156:14, 16
 180:14 205:5
midway 20:23
million 157:3
mind 21:9 64:3
 99:12
Mine 5:12, 15, 18,
 20 6:1, 6, 15, 19
 7:8, 18, 20 21:22
 22:1, 4, 6, 10, 13, 16
 25:6, 20, 22 26:6
 58:9, 13, 17, 21
 60:20 67:3 91:16,
 18 106:9 116:21
 124:5 132:2
 135:11 143:12, 17,
 22 144:8 145:7, 13

156:11 158:6, 8, 9,
 12, 14, 17 159:18,
 20 173:3 183:12
 184:1, 11 185:7
 186:10, 17
mine-constituted
 144:5, 6
mineral 15:22
 143:18
mines 21:10 22:9,
 15, 19, 20, 21, 22
 23:11, 16, 20 24:2,
 4, 7 25:9, 17 26:2,
 6, 7 66:17 144:11
 175:22 177:4
 183:20
mining 17:1 21:2,
 14, 16, 19, 21, 21
 22:8 23:1, 5 24:22
 25:11 27:3 36:13
 48:9, 10, 11 81:4, 5,
 13 95:2, 8 100:21
 121:23 122:15, 19
 123:2 140:20, 23
 141:3 154:12, 13
 168:13, 13 175:19,
 21 176:13 177:3
 184:1, 3 185:22
 193:13 201:14
 208:9 209:7
minute 156:20, 21
 157:7, 9
missing 46:15
Mississippi 42:6,
 10, 13
misspoke 52:13
misunderstood
 157:13
mixing 163:3, 6, 13,
 19 164:18, 23
 165:3 166:10, 19,
 23 167:12
MO 149:13
MO-1 129:12, 13
 131:8, 11, 15 132:7
 133:8 154:22
MO-2 131:15
 133:9, 11 154:22
MO-3 76:17 78:6
 84:20 133:12

178:10 180:22
 189:15 206:8
MO-4 111:12
 112:7
MO-5 197:22
 206:11
MO-6 198:6
MO-7 92:10
 108:13 198:17, 19
MO-8 111:13
 198:18, 19 199:20
MO-9 178:10
Mobile 33:19, 19
modifications
 103:21 211:23
moment 15:5 34:2
 75:17
MONDAY 1:22
money 48:12
monitor 125:13
 177:21 191:4, 9, 11
 200:6 207:8
monitored 207:10
Monitoring 5:8
 7:6, 13 21:13
 25:10 83:19 143:9
 149:2, 3, 11 171:23
 172:8 174:13, 13
 176:18 177:17
 178:5, 9, 14 179:9
 180:12, 17 182:13
 185:7, 17, 23 186:8
 196:20 197:8
 200:18 201:9, 14
 206:8, 21 207:15
 209:16, 23 210:14
 211:1
Monrovia 38:8, 11,
 13
Montevallo 32:19
 34:10 35:14, 21
 36:17 37:19
monthly 125:10, 11
 201:16
months 29:1 51:17
morning 9:21
 45:13 194:22
Morrison 38:8, 17
Mount 38:21
move 173:1

moved 37:20 86:9
 103:17
moving 15:13 68:5
 150:16
multiple 21:23
 22:1, 19
Muncher 30:6, 12,
 20
Muncher's 119:1
Musick 7:1, 4, 8
 82:11 83:3
MW-9 78:16 200:6
Myers 192:13
 195:20

 < N >
name 9:22 10:4
 17:11 22:10 34:1
 36:22 59:8 61:10
 69:5 124:10
named 90:9
names 22:3, 11, 17
 23:3 41:8
narrow 78:2, 3
National 20:7
 156:6
native 90:12
natural 62:19
 84:15 139:15, 18
nature 36:11 37:9
 39:1, 15 40:17
 43:2 44:20
near 42:20 73:21
 77:17 153:19
 160:21
nearby 44:23
 174:2
necessarily 82:13
 102:21 138:10
 173:22
necessary 3:9
 128:18
need 19:8 49:11,
 14 61:1 131:23
needed 40:23
 85:21, 22 86:1
 122:1 185:23
needing 193:18
neighboring 39:20

neither 189:3
 213:13
neutral 144:15
neutral, 144:18
neutralization
 183:21
never 60:11 66:15
 77:1 91:18 106:2
 153:4
New 13:21 14:3
 15:9, 14
nice 92:22
NOAA 156:6
Noble 59:6
Non-aqueous 41:20
nondisclosure 23:8
north 69:11 74:4
 84:2 85:5 87:13,
 15 91:22 95:18
 96:8, 9, 13, 14, 17
 98:9, 10 103:18
 107:15 111:8, 17
 112:3, 6, 11, 19
 114:21 150:11, 12
 174:18, 18 190:21,
 21 197:23, 23
 207:12
northeast 75:1
NORTHERN 1:1
 10:7
notably 118:6
Notary 2:5 9:3
notch 69:11, 21
 70:6
notes 60:3
notice 3:17 5:13
 6:7 29:22 121:20,
 23 124:15 141:4
 145:5 163:14
noticed 118:17
 146:19
notices 163:11
 193:15
NOV 145:16
 167:6 182:18
November 5:3
 58:7 128:10
 129:22 134:4
NOVs 175:14
 208:14, 16

NPDES 7:18, 20
 152:12, 21 153:5,
 12 192:7 193:6
 194:13 195:5, 14,
 21
null-out 158:12
NUMBER 1:3, 23
 8:2 12:8 14:10
 16:9 19:8 21:10,
 12 22:9, 18 24:3
 28:16 31:22, 23
 45:9 56:9, 16 57:8
 60:12 61:23 62:13
 63:1, 16 64:6, 8, 10
 72:1 80:14 83:6
 86:16 88:2 96:19
 97:23 98:17 107:6
 115:22 121:4
 123:13 127:11
 128:6 129:17
 131:1 133:16
 136:9 138:19
 140:11 141:6
 144:22 145:22
 146:21 147:5
 152:13 157:14
 158:16, 16, 18, 18
 159:12, 19, 23
 162:13 167:16
 168:10, 11 169:1, 4,
 7 173:10 177:7
 180:7, 17, 18
 181:12 182:15
 183:1 184:16
 186:19 187:14
 191:17 194:5
 196:10 199:2, 10
 202:18 208:3
 209:9 210:3, 18
numbered 142:20
 157:22
numbers 52:10
 123:22
numeric 166:5
numerically 123:7
 144:17
numerous 50:3
nutrients 174:5
nutshell 33:17

< O >
Object 67:5 69:3
 76:21 86:22
 120:11 122:20
 143:5 153:6 155:3
 159:14 160:20
 162:7 174:16
 176:15 207:1, 3
objected 207:4
objection 207:5
objections 3:9, 12
objective 172:3, 16
 175:14 190:22
 191:2
objectives 148:8
obligated 175:11
observation 142:11,
 18
observations 85:14
obtain 14:22 97:12
obtained 14:9
 97:10 137:7
obtaining 175:15
 193:11, 13
obviously 28:13
 79:8 93:11 111:4
 184:3
occasion 193:4
occasions 23:18, 19
 27:19 30:16 50:3
 205:9
occupied 155:21
occupies 59:20
occurred 46:20
Oceanic 156:6
October 203:3
offer 47:1
offered 3:14
 128:23
offering 210:13
 211:11 212:3, 7
offhand 140:6
Office 21:15, 18
 26:15 123:2 203:9
offices 2:7 82:23
Off-the-record
 116:8
Oh 34:18 87:10
 98:18 109:23

116:18 122:2
 135:10 143:16
 157:11 172:9
 192:18
oil 15:12
okay 11:17 12:2, 6,
 19 17:18 18:12
 22:12 31:6 45:7
 46:21 48:7 52:17
 55:10 61:4 64:11
 65:7 67:8 74:8
 78:7 79:7 91:20
 92:18 94:14 98:3,
 7 101:5 102:3
 115:20, 21 116:5
 120:4 124:3, 14
 128:17 130:19
 140:18 147:13
 171:21 175:17
 176:11 183:15
 185:4 187:13
 192:18 202:2, 16
 203:22, 23 204:6
 205:1 208:1, 19
 210:10
old 11:20 77:18
 101:18 120:7
 134:21 144:10
 172:12 177:18
older 37:22 80:10
 94:16
oldest 35:19
once 77:22
ones 97:8 115:10
 136:4 149:13, 14
 178:22, 22 198:13
 200:19
ongoing 40:20
 42:4 45:5
on-hand 97:14
on-site 41:16 82:7,
 11, 13 134:11, 13,
 16 163:7 195:17,
 20
open 28:9, 12, 16
openings 141:7
operating 22:14
 173:3
operation 36:13
 42:2 84:6 111:22

operations 50:12, 13 57:3
Operators 22:23 48:10, 10
opinion 36:12 37:10 38:9, 14 39:1 40:17, 22 41:9, 12 43:6 44:3, 11 55:3 136:6 208:12, 19, 23 210:13 211:11, 16 212:3, 6, 7
opinions 11:15 55:16 56:1 209:20
opportunity 61:7
opposed 67:1 75:15
oral 3:23 9:8
Order 7:16 60:8, 11 182:19 207:8 208:8, 11, 14, 16, 20 209:1
organic 41:7
organized 60:9
origin 62:17, 18 67:16
original 3:23 12:10 45:11 60:14 63:3 83:8 84:17 86:20 96:21 116:1 121:6 123:15 127:13 128:8 129:19 131:3 133:18 136:11 140:13 145:1 146:1 147:7 157:16 160:2 162:15 167:18 168:2 177:9 180:9 181:14 183:3 184:18 186:21 187:16 191:19 194:7 196:12 202:20 208:5 209:11 210:20
originally 14:3 119:23
OSM 194:3
outcome 34:8 39:10 43:17

outfall 152:13, 21 210:1, 2
outfalls 210:1
outflow 194:14
outlet 69:11
Outline 6:21 181:4
outlined 125:20 147:22
outside 61:13
outskirts 40:21
overall 185:7
overburden 66:14, 16, 18
overtopped 140:3

< P >
P.E 16:4 17:16
p.m 212:13
PAGE 8:2 13:13 31:13 35:10 38:4 47:10 52:6, 7 53:20 67:22 68:11, 11, 18 73:14 99:2 100:17 101:9, 10 117:5 119:11, 17 120:6 122:8 123:23 124:2 136:20 137:2 141:6, 20 148:12 149:5, 18 150:21, 23 151:3, 10, 14, 19, 22 152:3 164:12, 17, 23 165:12, 19, 21, 22 168:18, 19 169:1, 15 170:5, 6 171:7, 18, 20, 22 178:3 180:14, 14 181:19 182:2, 12 183:8, 19 184:20 187:5 188:5, 6 189:12 190:13, 16 196:21, 22 197:12, 17 198:17 199:11 200:8, 17 201:1, 20, 23 202:11 204:17 205:14, 16 206:6, 7
page-for-page 203:12

pages 53:10 158:2 185:9 198:22 204:7
paid 167:14
paragraph 21:1 47:18 120:7 125:23 126:10 128:15, 16 130:4 131:7 132:6 138:22 141:6, 12 142:20 154:14 160:8 161:3 164:17 170:5 186:7 188:6 194:11, 12 195:11 196:4 197:21 198:17 206:7
paragraphs 169:12
parallel 84:2 85:6 101:23 114:8, 13, 19 187:6
parameters 190:22 193:19
Pardon 191:10
part 10:10, 11 14:18 15:14 17:21 21:3 26:7 36:15 43:13 59:17 71:9 72:11 74:9, 22 84:12 86:6, 20 89:23 94:4 95:20 96:6, 6, 7, 10 111:10, 11 120:1 122:9, 11 126:12, 14 127:23 131:8, 21 139:1, 12, 14 145:9, 11 146:16 149:3 154:16 156:2 158:17 160:10 161:7, 15 163:16 171:3, 23 173:19 174:9 177:11 178:9 180:2, 13 188:9 192:5, 17, 20 195:9 196:6 205:20 206:9 207:9
particular 15:6 38:1 50:7 68:15, 17 72:2, 15 95:9

125:4 148:21 182:15 188:21 189:9
particularly 26:6 210:1
parties 2:3 3:12 34:7 213:14
parts 65:23 94:22 106:9 171:14 180:1
path 87:17 92:4, 15
pattern 84:21
peer 26:20, 22
PELA 5:3, 5, 14, 17, 19, 21, 23 6:2, 3, 5, 9, 12, 13, 21 7:1, 2, 3, 4, 13 12:19, 21, 22, 23 13:1, 5, 8 23:6, 14 24:5, 10, 22 25:20 26:3, 9 27:13 49:4 54:13, 16, 20, 23 57:5, 22 60:18 69:20, 23 77:1 81:6, 20 85:12, 18 86:2 97:4 100:17 107:22 115:9 121:20 124:6 125:4, 17 127:19 128:2, 13 129:4, 21 130:8, 11, 14 133:20 134:11, 15, 20 135:22 138:13 140:14, 21 143:20 145:11 146:3 151:15 160:4 163:18 166:23 167:12, 14 168:1, 15 171:8 172:4 176:9, 11 177:10, 21 178:4, 15 180:11 201:8 203:7, 17 205:20
PELA-owned 130:22
PELA's 20:10 76:3 81:12, 17 107:20 119:9

130:15 154:5 PELLA 12:21, 22 pen 64:4 87:11, 21 92:3 99:11 101:7 108:17 111:14 pending 10:6 people 11:23 82:15 186:13, 17 percent 28:12, 15, 23 29:2, 3 155:20 percentage 27:23 28:2, 19 percolation 201:22 202:5 perform 23:6, 15 24:6 27:12 56:19 127:19 154:18 155:2 160:18 167:12 performed 22:5 67:15 127:22 155:14 176:21 performing 134:1 period 10:17 23:5 24:5, 21 104:2 125:11 133:23 195:2 periodically 142:11 162:5 permanent 145:7, 12 Permeability 137:23 138:15 permeable 137:22 Permit 6:16, 19 7:18, 20 21:9 25:10 135:9, 10, 11, 18 152:7, 12, 21 153:8, 10, 12, 23 154:6 167:22 168:2, 8, 10, 13, 16 171:4 175:19 176:4, 13, 23 183:14 185:8 186:1 193:1, 6, 12, 14 194:14 195:5, 14, 22 permits 153:11 175:15, 21 192:7	permitted 22:20 176:2 permitting 22:14, 21 24:1 173:2 177:2 212:1, 2 person 59:8 personal 12:1 120:13 personally 27:20 51:22 134:1 personnel 185:16 perspective 209:6, 8 pertaining 168:9 pesticides 41:6 44:23 PG 5:2 pH 122:16 123:9, 10 143:7, 11, 18 144:16, 16 154:8 158:4, 9, 13, 23 159:7 189:22 190:3, 6 193:17 201:5, 8 204:12 phase 19:11 41:20 Philip 124:20 phone 73:9 photo 17:2, 4, 13 18:3 62:13 64:6, 7 67:23 68:4, 13, 16, 19 71:8 73:15 74:1, 9 77:14 79:13 86:9 101:3, 11, 18, 20 102:1 photograph 5:9 67:9 68:2 101:16 Photographs 5:5 60:6, 7, 16 61:8 63:7 119:9 135:16 photography 17:8, 17 72:9 82:22 97:10 100:20 102:22 photos 5:4 18:4 60:20 61:21 72:1, 4, 4 73:12 74:12, 14, 15 75:4 77:4 78:12, 22 80:4, 15 97:1, 9 119:7 120:15 physical 100:6	physically 148:14 186:2 picked 202:5 picture 73:22 76:16 119:12, 17 pictures 5:7 75:7 77:6 78:19, 21 118:23 119:3 135:7 piecing 95:6 pile 62:21, 23 64:13 66:4, 19 117:16 119:12, 18 120:3 158:20 piles 64:16 pine 59:19 62:5 72:2, 15 74:13, 17, 18 93:12, 12, 19 118:10, 13, 15, 17 pin 118:13, 20 pinpoint 69:15 pipe 78:21 79:10, 12, 14 103:19 pipeline 39:6 pit 158:17 174:3 pits 144:14 Place 8:21 38:1 89:9, 11 101:23 108:20 142:10 152:8 placed 65:21 66:19 104:3, 9 119:23 173:20, 20 174:4 placement 65:22 76:1 79:9 82:2 places 31:21 75:21 84:18 184:8 PLAINTIFF 1:6 8:15, 19 38:22, 23 39:13 40:10, 11 42:22 43:1 44:13, 15 plaintiffs 31:7 44:16 Plaintiff's 12:8 45:9 60:12 63:1, 5 83:6 93:5 96:19 115:22 121:4 123:13 127:11	128:6 129:17 131:1 133:16 136:9 140:11 144:22 145:22 147:5 157:14 159:23 160:4 162:13 167:16 177:7 180:7 181:12 183:1 184:16 186:19 187:14 191:17, 20 194:5 196:10 202:18 208:3 209:9 210:18 plan 169:13 172:4 173:22 181:4, 5 planned 172:23 planning 81:12 182:10 planted 118:12 plateau 118:2 play 69:20 107:22 136:19 187:18 Please 4:3 9:22 12:6 47:11 52:7 53:20 88:21 92:8 99:18, 21 133:19 147:10 165:1 183:4 192:15 203:2 point 94:2 108:12 109:6 110:3 112:2 118:4 121:22 134:8 149:23 150:2, 7 153:5, 13 162:11 163:12 185:19 191:6 194:8 197:1, 10 pointing 98:13 132:4 points 176:18, 19 188:2 policy 23:8 polluting 34:4 pollution 21:20 pond 59:16, 16 67:8, 17 69:7, 8 89:14, 19, 20, 23 90:17 91:4 104:10 105:17, 23 113:23
--	--	---	---

115:2, 6 132:14, 15, 19, 20 150:13 152:18 160:9, 18 161:13, 21 162:6 166:13 194:22 210:2 ponds 90:1, 7, 9 92:1 93:17 95:15, 16 100:12 105:17 131:12 132:12, 13 139:23 170:23 poor 101:11 porcelain 142:9 porosity 155:19 portals 144:11 portion 68:23 portions 59:18 207:23 position 16:1 26:9, 13 73:4 positive 59:12 61:16 possession 134:22 possibility 106:7 possible 192:7 possibly 26:7 66:3 83:2 122:17 129:15 171:15 178:21 187:12, 13 193:1 post 64:17 65:16, 18 66:9 67:10 72:22 77:20, 23 79:14, 16 80:11, 20 82:3 96:2 107:17 109:22 113:17 170:7 172:17 174:13 178:23 179:5, 6, 7, 12 193:11, 21 197:2 199:4, 18, 21 200:1, 4, 6, 11, 16 postgraduate 15:2 potential 21:19 41:2 50:4 51:19 82:2 146:8 183:21 potentially 95:1 132:1 Potter 44:14 45:18 46:11, 18	Pottsville 73:16, 21 75:8, 18, 19 84:16 90:13 137:14 185:6 Powell 134:14 171:17 Power 48:17 49:6 pre 77:23 pre-capping 178:22 precipitation 156:1, 13 precise 63:22 precisely 78:11 112:23 pre-GPS 164:3 pre-law 64:17, 23 65:3, 5, 19 66:1, 4, 11 67:10 77:12, 13, 19 79:17, 18 80:20 82:5 91:22 96:2 98:12, 15 107:13 108:8 109:22 110:18, 23 112:4, 6, 13 113:11 114:20 117:16 119:12, 18 121:2 172:17 174:15, 18, 20, 22 175:18 176:3 179:8, 9, 12, 17, 20 190:17, 19 193:11 197:23 198:11 199:7, 18 200:1, 5, 7 206:12 preparation 53:14 57:15 196:16 202:22 prepare 63:11 83:14 116:18 134:5 prepared 58:5 63:14 79:9, 20 149:9, 10 preparing 28:23 46:20 97:6 121:11 134:5 136:16 187:19 191:23 presence 195:22 present 26:9 139:10	presented 201:18 presenting 161:18 Preserve 36:15 president 26:10 pretty 20:16 77:7 98:5 118:14 prevent 80:19 previous 35:17 45:14 137:10 148:2, 6 149:1 primarily 26:17 27:18 56:14 62:14 82:8 primary 89:6 print 97:21 213:9 prior 3:14 30:14 34:22 68:13 209:18 211:2 private 39:22 Probably 24:20 25:13 28:12 29:2 49:13 50:19 62:23 103:8 131:16 134:7 136:22 Problem 5:16 100:4 143:3 problems 146:9 Procedure 3:20 9:5 208:11 procedures 212:8 proceedings 9:9 213:7, 12 process 19:7 55:22 66:20 70:13 81:12 107:22 111:5 139:3 185:15 187:8 190:15 processes 19:23 139:15, 18 Processing 6:17, 20 168:21 processor 13:10 56:14 produce 55:7 produced 41:5 60:17 97:2 119:4 134:18 135:14 producing 206:22 production 53:9, 12 116:11	professional 16:5, 8 18:6, 14, 23 professionals 16:14 18:19 20:8 49:22 professor 17:6 31:10 program 15:7 18:10 22:23 49:19 50:4, 20, 21 51:5, 12 171:23 172:8 178:5, 9 201:17 205:21 programs 51:1 progress 5:22 63:16 129:23 133:22 134:6 135:8 137:11 141:4 201:15 prohibit 182:16 Project 6:11 20:18, 21 21:16 25:7 52:1 55:5 69:6, 17 93:21 97:16 109:1 125:1, 3, 4, 15 127:4 130:2 132:3 134:2 140:22 projects 17:14, 17 21:5 23:9, 21, 22 26:17 28:11 37:22 51:22 55:5 186:13 pronounce 12:21 124:12 proper 88:15 properly 82:4 160:19 162:6 properties 20:1 44:23 51:1 property 33:19 34:4 36:16 37:13 38:17 39:5, 18, 20 72:15 84:9 proposal 125:20 128:13 Proposed 6:21 36:13 46:4 128:21 129:5, 8, 10 Protection 38:12 prove 166:11
--	--	--	--

provide 55:2, 4 57:12 85:16 135:18 168:15 provided 5:10 9:4 32:6, 9 52:11 135:12 201:16 203:19 210:6 211:5 Providing 26:23 27:16 proximity 74:21 104:10 Public 2:6 9:3 38:12 43:6 48:1, 3, 4, 15 49:3, 5 published 205:23 pulled 49:23 56:20 pumping 38:14 106:8 159:20 punish 11:19 purged 37:21 purpose 70:23 71:3 80:17 81:1 90:7 131:19 141:2 147:1 173:6 179:3 181:9 187:3 purposes 86:14 pursuant 55:17 put 17:20, 23 28:8 31:19 48:8 50:23 51:4, 17 64:9 80:14 84:6 107:1 142:6 158:6 159:18 166:23 PX-1 5:3 PX-10 5:13 PX-11 5:14 PX-12 5:17 PX-13 5:19 PX-14 5:21 PX-15 5:23 PX-16 6:2 PX-17 6:3 PX-18 6:5 PX-19 6:7 PX-2 5:4 PX-20 6:9 PX-21 6:10 PX-22 6:12	PX-23 6:13 PX-24 6:14 PX-25 6:16 PX-26 6:18 PX-27 6:21 PX-28 7:1 PX-29 7:2 PX-3 5:5 PX-30 7:3 PX-31 7:4 PX-32 7:5 PX-33 7:7 PX-34 7:10 PX-35 7:12 PX-36 7:14 PX-37 7:16 PX-38 7:17 PX-39 7:19 PX-4 5:6 PX-5 5:7 PX-6 5:8 PX-7 5:9 PX-8 5:10 PX-9 5:11 pyritic 184:10 < Q > Qualifications 47:13, 19 49:17 qualified 44:2 Quality 7:15 21:2 22:3 25:4 101:11 146:9 151:2 199:17 203:5 question 23:4 35:7 52:14 58:16 85:3 89:8 94:21 97:19 102:19 104:13 105:23 109:21 116:6 119:6 141:11 145:6, 16 157:13 167:2 176:3, 10 207:5, 14 208:10 questions 3:10, 11 55:11 93:1, 3 171:19 177:14 213:8 quick 102:8	quite 42:4 72:5 90:23 156:13 quote 64:23 132:8 142:21 177:18 194:14 quotes 132:1 < R > rain 182:11 186:5 rainfall 138:23 156:10, 22 159:5 162:10 raining 68:9 rains 126:6 raised 105:14 RAM 51:8, 13 R-A-M 51:9 ran 86:21 Randy 173:11 range 41:5 102:14 193:23 rate 29:9 54:19 56:8 rates 54:1 ravine 76:19 RBCA 50:16 Rdavis@starneslaw. com 8:23 read 9:16 97:20 99:9 141:5 169:1, 19 188:7 reading 3:2 149:13 201:6 204:21 205:12 readings 142:11 real 102:8 142:16 really 11:21 17:14 57:23 64:8 72:5, 12 73:2, 4, 5 89:1 92:11 94:10, 14, 23 104:20 109:11 113:2 128:11 134:3 143:23 144:4 148:23 150:5 170:2, 4 191:12, 14 192:18, 21 realm 57:19 reason 12:2 19:3 53:8 68:15 115:16	141:9 146:17 171:5 172:19 173:1 208:13 reasonable 57:11 58:3 Rebuttal 5:6 31:12 57:20 58:16, 18 recall 22:15 32:18 34:1 41:7 43:12 48:9 50:10 51:10 70:1 80:2 86:4, 5 91:14 103:22 109:4 116:11, 14 117:10 118:6 121:15, 17 123:12 124:5 130:1, 5 134:14 142:3, 5 143:14 150:13, 14 152:20 159:10, 15 160:12, 13, 15 162:1 163:3 172:3 181:16 182:17, 21 183:9 185:13 189:11 190:3, 5, 9, 12 193:23 198:13 recap 178:6 received 101:15 recharge 126:2 138:23 139:21 140:5 207:11 reciprocity 55:9 reclaimed 106:17 107:17 170:14 173:18 193:3 195:15 reclaiming 169:13 reclamation 25:20, 21 26:3 78:17 170:7 174:7, 14 197:1 212:4 recognize 47:7 135:21 recollect 211:10 recollection 11:17 63:18, 20, 22 74:2 76:12 81:10 95:22 115:12 116:15 122:7 123:4 124:17 128:5
---	---	---	---

161:23 163:8 175:21 179:1 180:2 192:23 210:10 recommendation 159:12, 17 175:12 recommendations 70:2 81:18, 23 82:6, 13 85:16 86:2 181:23 182:12 recommended 69:23 182:16 reconfigured 109:2 Record 6:10 9:22 48:21 60:17 61:2 86:14 92:21 119:10 128:11 135:19 141:1 145:2 147:9 167:8 181:6 187:21 203:2 recorders 186:5 records 11:16 134:21 156:5 recount 23:11 recounting 192:6 recovering 66:10 recovery 41:19 red 64:4 87:11 92:3, 12, 15 93:23 99:11 101:7 reduce 139:20 reduced 213:9 refer 31:4 34:19 59:15 62:1, 3 63:6 64:13 65:15 66:12, 21 67:3 69:5 76:18 80:7 88:13 105:9 116:3 121:19 147:20 148:3 reference 53:4 56:20 72:14 75:23 76:13 86:14 89:3 96:16 106:10, 16 115:11 123:18 126:16 131:6, 10 136:8 137:14 144:15 147:20	149:2 162:18 164:22 167:21 168:20, 22, 23 181:7, 9 182:15 188:1 192:14 202:15 206:17 208:8 209:4, 14 210:16 referenced 103:3 170:16 208:7 209:14 references 18:18 19:9 31:5, 11, 16 52:5 137:1 referred 66:22 69:1 76:11 77:2 89:14 91:18 106:17 108:9 114:6, 13 117:7 127:8, 18 137:16 144:16 154:7 163:19 referring 13:3 23:10 67:11 70:22 76:3 86:7, 11 108:12 112:12 121:1 122:14 126:18 128:20 132:9 137:18 142:17 143:1 145:15 148:22 149:16, 22 170:17, 21 177:19 190:21 193:8 194:2 refers 70:19 147:22 158:18 192:12 refuse 62:18, 21, 23 64:12, 13, 14 65:1, 22 66:11, 15, 21, 22 74:16 90:12, 17, 19 95:23 96:4 106:21 108:3 110:11 120:3 169:8 190:17, 19 198:11 206:12 207:12, 13 regard 40:3 57:20 86:3 93:22	regarding 26:23 50:3 173:13 192:20 211:21 Regardless 184:7 regional 51:16 registrations 16:6 Registry 20:8 regraded 120:21 regs 177:3 regulations 19:23 81:2, 3, 4 regulators 162:23 163:6 166:21 regulatory 20:20 127:1, 7 173:2 175:1 211:21 relate 115:8 157:6 158:19 205:17 related 40:19, 22 75:18 146:22 152:13 156:1 159:19 179:4 192:19 relates 145:4 194:10 211:19 relating 3:6 relation 149:19 relative 19:22 79:10 106:6 137:23 138:7 162:9 186:5 release 210:14 212:4 released 211:1 releases 212:1 releasing 209:16 relied 97:8 136:5 remaining 210:1 remarkable 118:9 remedial 41:2, 17 remediation 26:19 40:20 41:11, 14 42:3 remember 17:22 18:11, 12 22:3, 10, 17 23:3 36:22 104:12, 20 105:13 109:6, 11, 12, 15 111:21 114:10 116:3 117:2 123:7	131:10 135:23 140:8 142:8 147:13, 14, 15 161:18 163:5, 23 173:15 179:2 185:17 189:5 191:1 195:23 196:1, 2 remembered 61:10, 12 remote 17:21 18:4 remove 91:11 162:5 removed 66:18 139:17 162:3 rendered 37:10 38:10 repaired 105:7 repeat 117:18 rephrase 132:23 Report 5:3, 6, 12 7:13 10:20 11:15 12:14, 16 13:11 31:3, 5, 7, 8, 9, 10, 10, 12, 12, 14 33:12, 15 35:10 36:1 38:4 40:4, 5, 6, 8, 12 44:17 46:20 47:10 48:8, 18 52:6, 16, 21 53:6, 15, 18, 21 56:1 57:15, 21 58:6, 12, 16, 18, 19 97:6 115:11 123:19, 20 131:7 135:5 136:4, 6 137:1 162:19 165:11 177:23 181:8, 10 191:4, 14 196:16, 18 201:11 202:15 203:3, 7 208:8 209:15 210:8, 11 211:8 Reporter 4:4 9:1, 15 reporting 191:15 201:9 reports 27:1 37:23 38:3 42:13 48:19 55:19, 21 63:17 80:10 134:5, 6
--	---	--	---

135:8 137:11 197:5 201:15 204:8 report-writing 14:14 20:18 represent 164:16 representation 207:21 representative 64:9 represented 134:19 represents 19:21 213:10 reproduced 166:4 request 167:4 requested 167:11 210:23 require 55:23 required 19:12 175:15 193:6, 7, 9 195:4 requirement 122:18 152:11 175:1 183:13 195:5 211:2 requirements 22:14 173:2 177:3 209:17 requiring 194:13 reroute 147:2 research 15:16 145:21 reserved 3:3 residence 39:22 resistant 73:21 resolution 41:22 resource 26:20 resources 15:22 16:22 respective 2:3 responded 159:10 response 122:1 159:15 161:19 responsibilities 209:23 responsibility 33:17, 18 responsible 34:7 43:14 rest 166:15 174:20 199:6	result 21:21 167:6 169:21 177:14 182:6 213:15 results 143:10 144:3 151:14 187:22 191:16 202:11 resume 13:12, 15 14:22 16:5 17:18 18:5 20:9, 17 retained 4:4 5:7 10:8, 12, 13 11:7 29:13 30:15, 21 33:20 36:18 38:18, 22 39:13 40:10 42:22 44:14 47:23 49:3 54:17 55:1 97:12, 15 209:18 211:3 retainer 54:4 retention 11:5 55:17 161:6, 11 retired 59:12 61:16 134:15 revegetate 170:9 revegetated 170:12 review 27:1 30:9 31:6, 11 32:3 46:9 55:4 124:15 152:12, 23 153:8 168:6 181:8 reviewed 29:18, 22 30:2 31:2 123:19 171:16 reviewing 52:15 81:10 116:18 197:6 reviews 26:20, 22 revisions 50:4 Richard 7:11 8:20 32:10, 10, 11 98:20 140:16 ridge 99:8 rig 128:23 129:2 Right 10:15 13:13 22:11 27:14 28:10 35:15, 16 37:7 40:13 43:15 48:23 51:13 52:22 56:1 68:4 71:15 88:20	91:17 92:3 95:4 107:15 108:13 110:16, 17 112:19, 20 114:12, 14 116:22 117:3 123:20 124:22 132:22 133:7 137:4 139:19 140:6 157:2, 5, 8, 12 161:3, 9 165:2 166:5 169:9, 11 181:1, 5, 20 186:18 187:7, 10 188:23 189:18 195:6 199:1, 9, 22 200:2, 21 202:12 204:9, 11, 20, 21 205:10 206:23 207:2 210:4 right-hand 76:15 riprap 68:22 70:10, 15 104:3 risk 50:23 51:6, 14, 15 risk-based 50:15, 21 River 33:19 39:19 86:10 104:5 142:15 161:14 164:4 166:16, 17, 18 RIVERKEEPER 1:5 8:17 10:6 29:23 209:2 210:15 road 77:19, 22 91:15, 21 92:4, 16 94:11 100:13 109:5, 5 roads 176:1 Roadway 43:7, 9, 19 Rock 5:15, 18 6:1, 6, 11, 15, 23 7:5, 12, 14 21:8 59:20 62:18, 21 64:12, 13 66:15, 21 70:10 74:16 80:21 91:19, 20 92:16 93:2 99:5 100:23 101:2 106:21 109:16	110:11 126:13 128:23 152:8, 22 153:7 158:19 163:16 167:10 173:3 176:1, 4 183:9, 17 193:10, 14 196:19 203:4 206:12 207:12, 14 Rodger 38:7, 17 role 69:20 107:22 136:19 187:18 Ronnie 7:7 rope 164:4 Roughly 24:3 28:19 125:7 row 48:1 rubble 126:1 Rule 3:19 9:5 ruled-off 142:9 rules 3:6, 20 9:5 55:23 runoff 37:12 77:11 79:14 80:23 83:22 94:5 108:22 110:8 112:4 113:16, 19 114:20, 22 117:6 126:7 133:2 143:9, 13 145:8, 13 147:2 150:20 159:5 172:3, 9, 16 173:7 runs 125:13 < S > SAITH 212:14 sales 48:13 Sam 5:11 sample 151:9, 14, 20 152:4 185:20 188:7, 21 190:7 200:18 201:5 205:4, 13 sampled 150:17 samples 130:5, 13, 19 143:20 150:15 151:4 183:9, 9 184:11 186:3 191:8 205:18, 20 206:2
--	---	---	--

<p>sampling 67:15 130:8, 9, 10 134:4 139:9 153:5 186:4 187:22 188:2 189:9, 14 190:10 199:21, 23 200:22 201:2, 4 sand 138:11 saplings 118:13 satisfied 208:18, 18 211:21 satisfy 208:14, 15 satisfying 175:14 193:15 saturated 148:9 207:11 saturation 126:9 141:13 207:13 Sauk 42:17 43:4, 10 saw 68:12 90:18 93:10 95:3 100:8 103:7 104:22 105:17 116:15, 18 120:9 182:9 204:9 206:3 saying 29:4 53:3 86:6 99:22 128:20 156:21 179:15, 15 196:1 199:19 says 10:20 21:1 42:18 86:16 99:10 108:8 120:6, 20 122:9 124:14 125:23 126:11 128:17 129:22 132:7 137:6, 12 146:9 147:4 158:10 161:4, 16 164:22 170:8, 13 180:16 182:12 186:7 188:18 190:1, 16 194:14 202:13 205:6 206:11, 14, 18 207:2 208:18 scales 189:4 scanned 203:19 scenarios 157:23</p>	<p>scene 120:10 scheduling 28:14 school 14:5 17:6 science 172:21 scientific 172:19 211:16 scientist 208:12 scientists 49:23 scope 54:13 scratch 93:5 screening 51:16 seam 184:2, 3, 4, 5, 6 Second 2:8 8:13 38:7 117:5 120:6 122:8 128:15 132:6 136:20 141:5 181:19 183:8 187:4 188:5, 6 197:21 Section 31:16 34:21 46:22 47:13 49:17 52:5 66:8 117:5 sediment 62:2 68:6 71:4, 4 85:23 89:11, 13 90:6, 9, 9, 11, 14, 16, 17 91:4 93:16, 17 106:4 113:19 147:2 160:17, 18 162:6 Sedimentation 21:1 22:2 37:12 sediments 140:5 162:2, 5 see 11:16 13:13 21:3 32:1, 17 45:17 46:16 47:14 55:12 62:12 63:14 67:9, 17 72:10 73:15 79:13 84:3, 15 90:14 94:1, 16, 20 95:19 98:1 101:2, 4, 5, 12, 13 102:1, 4 112:12 114:4 121:11, 14 122:11 126:2, 13 131:8 135:21 139:1 145:9 154:15 155:16</p>	<p>156:1 160:10 161:6 164:21 166:7 168:10 171:9, 23 172:5 179:14 180:13 182:2 187:21 188:8 189:17, 19 191:14 196:22 200:19 206:9 seeing 116:11, 14 123:21 130:1 133:14 160:12 181:17 seen 57:8 63:9 87:8 106:10 116:13 121:8, 15 124:7 127:15 136:13 146:4 160:5 168:4 183:5 186:22 191:21 209:17 211:2, 9 seep 75:14 seepage 73:17, 18 75:9 seeps 76:7 Segco 184:2, 5 segregate 80:22 172:2, 5, 9, 16, 17 segregated 85:22 segregating 81:8 173:6 segregation 182:13, 21 191:3 seminar 17:22 18:2 send 140:22 senior 17:12 134:15 sense 11:8 133:13 sensing 17:21 18:4 sent 113:17 151:16 sentence 120:20 129:23 141:6, 8 149:1 161:16 172:7 190:16 192:16 separate 79:17, 17 127:21 separately 11:6</p>	<p>September 196:6 204:15, 18 sequence 95:6 179:3 series 48:18 205:16 serve 71:3 Service 48:1, 5, 15 49:3, 5 services 23:6 24:6 27:12 set 52:12 54:10, 13 55:18, 23 143:9 169:15 181:22 sets 178:4 setting 25:12 46:3 100:6 139:12 142:17 settled 34:9 39:11 42:1 91:1 settlement 160:23 settling-out 85:23 160:19 setup 123:4 Seventh 8:21 severely 120:8, 12, 16 shade 65:12 shale 62:14, 15, 16 shallow 129:1, 11 shallower 179:11 199:14 sheen 75:10 Shelby 36:9 shipped 130:19 shoot 186:14 shoreline 164:20 short 14:12 17:20 61:5 144:20 177:5 212:10 shorter 105:3 shortly 69:19 short-term 48:14 shot 68:12 show 12:11 60:15 63:4 72:14 79:9 83:9, 22 87:11, 12, 16 92:3 96:22 99:5, 12 115:7 118:23 121:7 123:16 127:14</p>
---	--	--	--

140:14 145:2
 147:8 162:16
 166:11 191:20
 194:9 196:13
 202:21 209:12
 210:21
showed 160:3
showing 5:9
 115:16 146:2
shown 54:1 72:19
 79:23 80:8 83:17,
 19, 21 84:13 87:5
 89:9 100:1 108:7
 111:8 113:18
 170:18 178:11, 12,
 13 188:2, 15 195:6
 206:2
shows 79:5 84:1
 114:11 125:19
 131:14 149:11
 165:3 166:14, 16
 198:22 202:8
side 68:4 69:7, 12
 79:15 80:21 93:19
 104:5, 7, 8 109:4
 115:3 172:11, 12
sign 9:17 163:20
 164:10 183:7
 187:2
signature 3:2
signed 181:20
 192:13
significance 72:3
significant 28:22
significantly 43:11
silted 160:9
siltstone 62:16
similar 74:13
 83:16 167:23
 204:8
similar-type 18:21
Simon 7:11 195:12
simply 208:10
Simpson 59:7
sir 10:19 11:3
 13:14 18:8 21:4
 26:12 28:18 29:8
 30:13 31:18 32:2
 40:14, 16 42:8, 19
 44:12 45:21 46:14

47:2 48:6 51:10
 52:2, 4 53:19, 23
 54:3, 15, 18 58:8
 59:4, 23 60:19
 63:8 69:22 70:20
 71:7, 16, 19, 21
 77:15 80:2 85:19
 87:10 89:15 93:8
 97:22 98:16
 108:14 114:5
 116:20 122:5, 12
 126:15 131:9
 136:18 138:21
 139:2 151:1 152:2
 156:3, 18 163:4
 164:15 168:7
 169:11 171:13
 173:17 175:4
 181:21 184:23
 185:3 188:10
 189:16 196:23
 197:16, 20 198:1,
 12 202:17 204:15
 206:10 211:14
 212:6, 9
site 10:17 21:22
 40:21, 23 41:21
 58:10, 14, 22 59:14
 60:21 64:20 69:17
 71:13 72:7, 8
 73:23 74:20 75:15
 78:14 79:1 82:19
 84:6 85:14 86:16,
 17, 21 87:9 89:5
 91:16, 18 93:3, 15
 94:19 99:23
 100:22 103:23
 106:19 108:21
 111:18, 23 113:15
 116:21 117:3, 15
 125:6, 7 142:13
 143:3, 21 145:13
 146:9 147:3, 20
 149:18 151:4
 152:22 153:4, 13
 166:20 168:21
 169:18 178:16
 182:8 185:2
 186:10 188:8
 190:11 196:9

Sites 5:8 22:1, 4
 83:19 149:3 151:9
 182:3 200:18
 202:5
situation 209:5
Six 24:4, 4 25:16
 29:1 51:17
six-inch 173:20
size 72:6
sizes 118:11
Skelton 39:12
skip 77:8
Slagle 50:1
slashed 93:23
 114:3
slides 135:5
slightly 137:19
 166:14
slope 103:5 110:5,
 10, 11, 15
sloped 110:12
 173:22, 23
sloping 108:3
slough 88:5, 9
 99:13 101:5
 147:22
slowing 160:22
slurry 67:2
Small 22:23 23:1
 74:18 79:3 97:21
 118:12, 18 169:2
Smith 6:5 140:20
sneak 61:3
so-called 163:13
software 51:12, 21
Soil 39:3 41:15
solid 80:11 90:20
 113:5, 6
solids 85:23
 122:17 160:19
 161:12
somebody 32:20
 188:20
someplace 165:4
somewhat 65:23
 73:3
Sonya 50:1
sophistication
 141:23

sorry 16:12 17:20
 18:11 22:9 23:2
 31:1 32:21 34:2
 52:13 55:6 79:22
 87:13 117:18, 21
 119:6 123:21
 124:1 137:19
 144:19 145:15, 17,
 18 157:11 172:5
 180:6 185:13
 192:15 200:9
 207:12
sort 26:17 41:4
 81:23 102:2 134:1
 150:17
sound 107:10
sounds 102:6
source 43:8 75:15
 138:22
South 2:8 8:13, 18
 70:7 71:6 87:6, 13
 96:13 103:18, 19
 108:13 150:1, 2
 165:16
SOUTHERN 1:2
 2:7 8:11 194:23
southwest 110:13,
 14
space 155:20
speak 209:5
speaks 197:14
special 16:18
 128:22
specialized 14:11
specialty 16:18
 17:12
specific 22:10
 41:16 63:15 67:20
 70:1 85:20 156:8
 163:22 164:9, 21
 165:21 166:1, 14
 193:23
specifically 20:22
 37:16 50:10 82:1
 97:15 119:16
 129:7 154:8
 163:23 165:6
 167:9 195:21
specifics 196:2

<p>specify 180:3 spell 24:14 spelled-out 20:16, 17 spent 28:13, 17 spillway 69:2 150:6, 9 160:10 162:8 spoil 66:19 117:6, 8 120:7 spoken 82:15, 18 sponsor 50:7 sponsorships 16:13 spot 189:9 spread 29:1 Spring 36:15 springboard 146:17 square 124:17 138:20, 21 stack 52:21 60:16 97:17 100:17 135:21 138:12 staff 56:11, 12, 15 185:22 196:5 stage 169:20 staking 131:7 stamp 52:10 stamped 60:18 standard 29:9 standing 68:20 150:16 starkly 78:10 STARNES 8:20 33:21, 22 36:18 54:2, 5 start 31:16 88:1 92:10 136:20 started 17:16 18:10 95:23 102:15 103:20 107:5 132:5 starting 13:18 168:19 177:11 197:17 200:17 205:16 starts 108:13 204:11 State 2:6 9:3, 21 18:6 21:11 32:17 33:2 35:13 36:7</p>	<p>43:23 44:3 45:2 162:22 163:6 166:20 213:3 statement 5:22 129:23 161:9 STATES 1:1 18:20 19:5, 14, 16 50:22 51:6 station 141:22 142:4, 6, 14 164:6, 6 stations 143:10 149:12 status 93:2 stay 60:11 steep 98:10 stereotype 213:8 stereoscopes 17:9 stippled 65:2 stipples 166:4 STIPULATED 2:2 3:1, 8, 16 stipulation 9:6 stipulations 9:15 stop 48:4 66:7 88:4 199:1 Storage 5:15 6:1, 6, 11, 15 50:20 51:2 straight 89:17 straw 74:18 118:15, 17 stream 75:5 87:2, 5, 9 88:7, 19 93:7, 9, 23 94:6, 7, 15, 17 95:9, 20 96:18 98:4, 8 99:23 126:18 206:13, 18, 19, 23 207:15, 19 streams 81:9 182:22 Street 8:18 stretched 164:4 structure 73:15 93:20 94:12 structures 72:19 80:5 stuck 91:14 studied 17:7</p>	<p>studies 21:2 22:3, 13 47:20 Study 5:20 6:1, 6 sub 148:17 subcontractors 20:19 subject 33:14 77:5 subjects 14:12 submit 186:1 submitted 31:7 55:19 56:5 58:6, 12, 18 162:22 171:3 193:12 subsequent 110:12 125:18 151:20 208:16 211:22 substance 163:10 substantial 93:20 substitute 14:17 subsurface 126:8 141:16, 17 Sue 29:23 sufficiency 66:10 sufficient 78:7 suggesting 122:22 Suite 2:8 8:14 sulfur 184:11 Sulkin 31:10 summarizes 178:1 summarizing 158:2 SUNY 13:21 superior 134:12 supervise 85:12 supervising 134:17 supervision 25:19 213:10 supervisor 85:15 134:12 Supplement 6:16, 19 167:22 supplemental 193:14 supply 38:13 43:6 support 27:17 28:1 42:15 56:10, 12 supposed 54:20 186:15 201:16 sure 32:22 34:13, 16 35:5 37:17, 20</p>	<p>49:5 52:20 54:12 55:14 61:2 69:5 70:5 71:11, 12 90:18, 22 92:11 93:13 94:9, 20, 21 102:9 105:11 113:2, 9 122:2, 6 126:21 129:7 130:16, 16 136:2 137:17 138:8 143:8, 16 148:11 150:21 154:10 155:4 158:10, 18 159:11 165:23 170:2, 4, 15, 20 171:1 176:7, 19 182:19 186:4 191:12 197:11 204:20 210:3 211:9, 9 Surface 7:6, 13 21:10, 15, 19, 20 22:19, 22 25:5 26:6 48:9 66:17 67:11 68:5 81:4, 4, 13 83:20 94:1, 17 95:20 100:2 121:23 122:15, 18 123:2 140:20 141:3, 18, 21 142:1, 13 143:20 144:13, 14 147:2 149:15 150:14, 17 154:12, 13 158:12 161:13 168:13 171:22 172:8, 22, 23 175:23 176:18 177:3 187:22 188:2, 21 193:13 196:19 197:8 201:4, 14 205:18, 22 208:9 209:7 surprised 72:12 Survey 15:17, 23 17:10 suspended 122:17 SW-1 74:3 187:23 205:8 SW-2 84:13 93:23 187:23 188:7, 14</p>
--	---	---	---

189:1, 15, 17, 21
 190:23 191:8
 201:4 205:2, 11
SW-3 76:17 78:6,
 8, 16 84:20 187:23
 188:18 189:1, 15,
 17 190:6 191:8
sworn 9:12
symbology 87:4
 88:7 99:7 165:23
 166:2
system 50:21
 59:17, 19 79:10
 131:22 137:12, 13,
 15 146:15 148:4, 5,
 11, 12, 15, 20
system, 142:22
systems 144:13
 190:14

 < T >
table 150:18
 189:13 197:4
 201:3 204:10
 205:5, 23 206:3
tables 205:17, 22
 206:1
tabulating 206:4
take 12:12 19:15
 35:2 49:11, 14
 60:6, 7 61:1, 21
 89:1 92:3, 6 99:11
 102:8 108:17
 111:6, 14 120:4
 131:4 138:4
 142:11 143:20
 158:4 169:18
 180:10 181:15
 185:19 189:13
 196:14 205:4
taken 2:4 3:23
 14:11 61:6 68:2
 73:9 74:1 92:20
 119:15 130:6
 144:21 165:8
 177:6 183:10
 185:22 190:2, 9
 191:4 205:20
 212:11 213:7

talk 11:7 48:2
 55:10 61:20
 115:19 195:21
talked 93:11
 154:11 193:22
 194:21 197:17
talking 48:22
 86:15, 20 87:23
 99:6, 13 100:5, 5
 104:17 109:13
 115:9 117:12
 121:2 132:11
 138:14 139:13
 142:21 169:10
 197:21 206:7
talks 128:16 130:4
 131:7 141:12, 21
 169:16 177:17
 183:8
tall 104:21
tank 39:5 50:20
tanks 51:2
tape 163:20
target 186:16
task 67:20
taught 14:15
teacher 14:17
technical 40:4
 56:15 120:18, 18
 126:23 127:7, 8
technology 142:7
tedious 12:4
tell 13:17 16:21
 23:22 26:2 38:9
 47:22 49:7, 20
 50:16 64:22 67:23
 68:18 73:5, 23
 77:5 78:13 80:5
 84:20 88:16 89:6,
 12 95:3 96:9
 106:21 110:9
 115:13, 15 117:11
 119:5, 7 139:9
 157:21 177:10
 182:1
temporarily 164:5
Tennessee 21:16,
 22 32:20
tense 197:15

term 40:7 66:15
 127:1, 1, 7, 7, 8
 141:14 143:12, 15
 144:1
Termination 6:7
terminology 40:6
 64:16, 19 66:23
 70:19 88:12 89:16
 113:9 117:10
 120:19
terms 28:20 54:10
 64:17 72:18 96:13
 103:10 123:8
 195:23 204:9
terraced 174:1
terraces 110:7
terracing 78:17
terrain 73:2
territory 103:9
test 86:17 88:2, 3
 115:17 128:18, 22
 129:1 138:17
tested 174:3
testified 9:13
 43:20 45:19 46:3
 105:16 134:19
testify 33:10 36:5
 45:6 46:2
testifying 35:9
testimony 3:23
 5:10 37:6 39:16
 40:15 42:13 43:2
 44:20 46:23 47:4
 49:2 53:16 70:6
 99:21 175:17
 213:11
Testing 59:11
 61:17, 19 83:21
 138:13 139:8
tests 108:1 138:1
 201:22 202:5
Texas 15:13 51:8
Thank 11:18
 14:21 22:12 31:6
 35:6 46:21 49:16
 64:11 92:13
 102:10 116:5
 120:4
theirs 85:11

thereto 3:15 213:8
thick 74:17
thicker 92:15
thickness 107:12
 141:13 154:21
thing 19:3 144:14
 204:21 205:11
things 20:22 25:3
 27:13 62:3 64:4
 94:12 95:7, 7
 104:9 111:7
 115:20 125:12
 137:9 182:10
 186:14, 14
think 10:13 20:16
 22:11, 21 26:5
 27:18 29:5 30:16
 33:1, 21 34:22, 23
 50:11 64:14 70:12
 72:17 73:1 74:21
 75:16 76:22 78:5,
 9 82:10 83:15
 84:12, 20 87:15
 88:14 95:13 96:15,
 16 100:14 101:14
 102:23 104:1, 8
 105:2, 3 108:23
 109:3 118:22
 120:17 121:19
 123:1, 6 124:7
 125:5, 12, 18
 127:23 128:4
 129:8, 11 131:13
 132:11 133:10, 11
 135:20 136:7, 22
 137:17 138:9
 139:12 140:6
 141:1 142:17
 143:6 144:8, 9, 14
 145:14, 16 147:23
 148:6, 23 152:10
 154:7, 12, 19
 158:21 159:8
 161:15, 22 163:7
 165:11 167:2, 7
 169:20 170:1, 1, 11
 171:19 173:10, 13
 177:13, 19, 23
 178:20 182:7
 183:11 184:5

<p>193:17 194:20 195:16 201:13 204:23 207:14 thinking 102:18 third 124:9 125:23 147:17 155:5, 8, 10 182:2 186:7 194:11 thought 63:20 75:17 122:6 131:12 145:18, 20 163:15 170:17 206:22 thousands 25:13 three 16:12, 13 18:18 26:7 75:4 134:9 151:3, 19, 22 155:9 157:22 158:5 161:5 164:2 181:1 189:14 205:17 207:20 threshold 189:22 thumb 32:7 thumbed 30:4, 11 tie 93:13 time 3:13, 13 10:17 12:12 15:11 18:17 19:10 24:5, 21 25:4 27:23 28:8, 12, 16, 20, 20, 22 29:3 42:5, 9, 16 44:9 49:12, 14 50:22 53:14 58:1, 5, 17 61:1, 5 63:23 64:1 66:2 67:21 68:8 72:9, 9 79:20 81:14 90:5, 5 91:3, 14, 17 92:19 94:5 96:1 99:23 100:2 103:16 104:10, 10 106:22, 23 110:3 111:6 112:2 113:14 120:22 121:18, 22 123:10 124:23 125:10 126:22 129:3 130:17 131:21 133:23 134:8, 13, 14 139:23 144:20 148:8 150:3 152:7,</p>	<p>19 156:13 161:6, 11 162:10 163:12 169:18 174:8 175:2 177:4, 5 178:19 185:19 187:5 190:5 191:2, 3, 6 192:11 205:3, 12 212:10, 12 times 11:12 37:21 56:9 70:14, 17 91:7 130:17 162:2 195:20 title 19:4 125:4 titled 47:13 53:21 167:22 titration 158:1 today 11:10 12:19 23:10 53:16 103:9 105:1 112:14 116:13 118:7 139:3 148:12 149:23 156:10 today's 57:4 toe 72:21 89:21 told 49:12 61:9 121:22 173:9 Tom 7:1, 4, 7 59:7 82:11 top 65:4 68:6 73:20, 21 90:20, 22 91:22 92:12 99:7 118:2 122:9 151:9 160:23 170:5 200:5 topic 194:10 topics 115:8 topo 87:1 88:5 102:19 103:3 164:13 topographic 99:3 147:23 149:9 topographical 155:1 Topographically 149:21 topography 84:15, 17 154:21 topos 98:19 total 122:17 200:13, 14, 15 tracks 91:13</p>	<p>training 14:12, 19 17:3 175:7 185:16 transcript 3:23 12:10 45:11 60:14 63:3 83:8 96:21 116:1 121:6 123:15 127:13 128:8 129:19 131:3 133:18 136:11 140:13 145:1 146:1 147:7 157:16 160:2 162:15 167:18 177:9 180:9 181:14 183:3 184:18 186:21 187:16 191:19 194:7 196:12 202:20 208:5 209:11 210:20 213:11 transfer 43:11 transitioned 81:15 transported 66:20 travel 161:13 treat 158:7 159:6 Treating 32:18 33:4, 23 34:3 35:14 treatment 41:20 145:7, 12 158:3 159:2 tree 72:2, 16 treed 84:22 trees 72:6 73:5 74:13, 17, 18 77:13 118:11, 19 trial 3:13 33:10 36:3, 5 40:15 43:20 45:19, 23, 23 tributary 76:20, 23 77:1, 3 86:21 87:17 88:13 95:20 96:13 126:11, 19 206:17 208:1 tributary, 126:22 trickle 68:7 73:17 tried 34:17 trip 58:13 59:5 trucking 43:11</p>	<p>true 161:9, 12 175:20 179:22 203:23 213:11 trust 13:3 truthing 155:12 try 11:14 12:4 60:9 67:16 84:23 89:16 135:23 145:12 190:3 trying 32:18 75:9 80:2 94:14 95:12 148:8 166:2, 7 190:23 191:7 192:22 193:20 194:15 195:9 197:7 TTL 61:15 130:8 151:18 Tuesday 7:9 tune 120:18 turn 13:11 31:13 47:10 52:6 53:20 67:22 68:18 73:14 77:14 98:8 100:16 101:9 137:2 171:7, 18 184:20 201:19 turned 125:20 129:12 Tuscaloosa 10:2 15:10 26:15 59:11 61:17 twelve-foot 173:21 two 35:9 46:9 55:18 74:15 80:23 85:21 86:8 89:8, 11 90:7 92:1 95:15 131:12, 13 132:12, 13 133:7 134:9 154:20, 23 155:4 170:11 174:1 180:23 182:22 185:9 189:18 191:8 193:15 198:21 199:18 200:3 207:18 211:22 two-and-a-half 161:5 two-inch 118:13</p>
--	---	---	---

<p>type 22:5, 15 types 51:1 typical 156:10, 16 typically 35:20 164:1</p> <p>< U > Uh-huh 62:16 ultimate 43:17 ultimately 48:1 51:4 129:13 146:15 195:5 201:13 211:19, 20 undergraduate 13:19 17:5 underground 21:10 22:19, 21 25:6 48:10 50:19 51:2 106:9 132:2 144:11 158:17 175:22 177:4 183:12, 15 underlying 206:3 underneath 75:20 98:11, 14 179:10 understand 10:8, 16 45:14 46:21 52:20 55:22 65:7 74:6 80:1 87:20 94:20 95:4 109:21 137:3 156:19 176:10, 17, 19 179:14 205:18 understanding 52:17 54:23 70:5 75:13 90:8 99:20 135:17 153:16 173:6 175:3, 6 197:15 199:19 Understood 11:9 49:2 55:14 85:19 undertaken 182:1 unfortunately 98:22 189:3 UNITED 1:1 University 14:11, 16 15:3 32:19 34:10 35:14, 21 36:16 37:19 97:11 unnamed 88:13</p>	<p>update 46:19 133:22 updated 45:7, 8, 14 updates 140:22 Up-dip 180:16 upgradient 62:6 104:7 206:12 upper 33:19 59:15 72:21 77:16 89:18, 20, 23 90:1, 14 91:4 93:12, 19, 19, 19 94:3 102:11 104:21 105:14, 17 113:23 115:2, 6 120:1 132:14, 14, 17 133:3, 5, 11 137:18, 20 138:18 139:22 160:9 163:16 170:22 180:2, 3 up-slope 132:15 137:20 139:6 Upstate 13:21 upstream 104:8 use 17:16 40:19 48:1 51:6, 21 97:6 143:12 144:1 154:23 166:23 186:16 useful 115:18 uses 172:2 USGS 87:1, 4, 8, 18 88:4, 15 94:16, 18 96:15 97:18 98:5 100:1 134:15 142:14 Usual 9:15 UT 88:12</p> <p>< V > valley 74:4 76:19 78:3 93:18 95:15 96:18 98:2, 8 100:7, 8, 9 106:22 113:20 139:11, 14 148:9 149:4 158:21, 21, 23 192:21 207:9, 11 values 123:8</p>	<p>vandalism 186:13 vapors 39:4 varied 109:9 various 14:12 118:11, 14 133:22 144:2 183:12 vary 28:13 vegetated 118:10 139:7 170:14 174:5 vegetation 72:6 118:1, 16 139:20, 22 vegetative 120:21 177:21 vehicle 60:1, 2 verbally 82:7 verdict 45:22 version 45:14 51:13 99:4 versus 32:17, 19, 23 33:3 35:11, 13 38:8 100:5, 6 129:5 165:19 166:15 vice 26:9 vicinity 74:3 76:17 77:18 79:2 84:19 view 55:2 59:13 Village 42:17, 17 43:4, 4, 10 Violation 5:13 6:8 122:1, 8 124:15 126:11 141:4 145:5 163:11, 15 193:16 violations 121:20 211:22 visible 94:17 95:11, 19 100:1, 8, 10 111:11 112:14 113:3 visibly 94:1 vision 73:5 visit 58:9, 17, 21 59:14 60:4, 21 124:4, 6 visual 17:9 void 155:20</p>	<p>volume 105:20 106:1 volumetric 154:15 155:2 volumetrics 56:22 Volunteer 139:20 volunteers 118:12 VS 1:7</p> <p>< W > wait 46:12 waived 3:18 walk 89:5 Walker 22:7 walking 77:17 want 16:6 23:20 58:2 63:6 89:4 99:1 105:9 108:6 109:21 113:9 116:2 187:23 203:21 204:20 wanted 55:13 122:6 129:3 145:19 WARRIOR 1:5 8:17 10:5 25:14 39:19 142:15 184:8 wash-aways 66:3 washer 66:21 169:7 washers 175:23 washing 66:1, 20 162:12 Waste 6:17, 20 27:4 67:4, 10 76:1 77:23 81:9 117:16 119:12, 18 158:19 168:21 173:19 Water 7:15 21:1, 20 22:2 25:4 37:12 38:12 43:6 68:5 71:2 75:6, 10, 11, 12 81:14 83:20 90:5 93:16 95:16 100:5, 12 106:3, 7 130:4 131:23 132:1 138:4 141:16, 21 142:2, 13, 21 143:4, 7, 20</p>
---	---	---	---

144:11, 13, 16
 146:8 148:10, 14,
 19 149:15 150:14,
 16, 16, 17 151:2
 155:15, 21 158:3, 6,
 7, 11, 13, 23 159:3,
 4, 16, 18, 20 160:22
 162:9 163:21
 164:8 165:18
 166:12 171:23
 172:8 173:15
 176:18 186:5
 187:22 188:2, 21
 190:10 193:19
 197:8 199:16, 17,
 17 201:4 203:5
 205:18, 22 206:22
 207:10, 22
waterfront 33:18
waters 191:3
Watershed 21:17
 148:17, 17
waterways 36:14
way 18:22 29:20
 44:11 55:22 66:12
 79:19 81:8 85:13
 89:3 91:23 94:10
 95:9 103:20
 110:10 122:23
 124:19 128:4
 144:9 155:1
 160:15 164:8
 172:20 173:19
 176:11
ways 70:13 83:17
 148:13
Weekly 125:9
welcome 31:5 35:1
 135:16 204:1
well 11:8 20:16
 21:8 23:14 25:13
 28:9, 21 64:8 74:5
 75:17, 19 79:12
 93:11 95:13, 23
 100:11 104:1, 15
 109:3 114:2 127:3
 129:15 143:18
 145:20 146:12
 155:9 162:8
 166:12 172:21

179:10 180:17
 185:14, 15, 20
 186:8, 10, 11 194:3,
 11, 20 197:22
 198:3, 6 199:1, 10
 200:6, 13, 15
 203:23 205:17
 207:7 208:13
 211:19
wells 25:11, 14
 83:20 107:6, 13
 133:7 149:2 178:8,
 15, 18 179:5
 180:12, 14, 23
 184:21 185:1, 5
 186:3 197:10, 14,
 18 198:10 199:16,
 18 200:3 206:8, 21
 207:6, 10, 18, 20
went 14:5 53:11
 90:10 91:21
 112:11 115:5
 186:10 201:14
We're 10:15 11:9
 12:2 23:9 24:21
 49:16 53:9 71:8
 74:21 77:6, 12
 80:5 83:23 86:15,
 20 87:23 92:21
 100:4, 5, 16 104:17
 135:20 138:14
 150:21 203:13
west 65:15 79:15
 80:10, 20 84:1
 85:5, 21 101:23
 110:6, 16 112:11
 113:3, 7, 13, 16
 114:3, 3 115:3
 118:3 172:12
 173:23 188:8
 193:15
western 26:7
 77:10 108:5
we've 11:23 14:18
 30:16 31:23 37:20
 95:5 99:6, 13
 115:8 121:1
 172:15 186:23
 200:17 204:12

whatsoever 117:7
White 21:17
Whitt 50:1
wide 41:5 92:8
width 103:11, 12
 105:1, 3 109:12
wild 58:2
Willett 173:12
Winters 2:5 3:21
 9:1 213:19, 20, 22
withdrawal 38:15
witness 3:3 9:7
 11:1, 6, 6 34:14, 18
 35:6 47:12 52:8
 61:4 65:8, 11 74:8
 75:3 78:5 80:16
 88:23 92:14 99:17,
 19 101:8 102:7
 108:19 111:16
 114:18 119:2
 133:21 204:3, 6
 210:5 213:12
witnessed 182:20
wondering 101:17
 177:15
Wood 32:18 33:4,
 23 34:3 35:13
Woods 32:20, 22
 35:11 37:4, 13, 16
Word 13:10 56:14
 79:6 120:12
 147:19
wording 172:2
words 99:9 150:15
work 5:22 6:21
 11:5 13:8 21:6
 22:5, 15, 18 23:13,
 15, 23 24:1, 12, 22
 25:8, 21 26:15, 17
 28:2 29:6 34:11
 36:23 48:19 49:4,
 20 50:16 51:21
 54:2, 13, 20 56:5,
 19 57:5 71:17, 22
 79:11 82:8 87:20
 100:13 102:15
 111:4, 23 113:15
 122:3 125:6, 19
 127:19, 22 128:2
 134:1 163:5

171:11 174:7, 14,
 21 176:9, 12, 21
 185:17 187:7
 190:15 197:1
worked 15:21
 21:6 22:22 24:10
 26:3 30:18 32:13
 33:6 36:19 37:2
 42:9 43:22 44:10
 56:9 71:14 82:21
worked, 42:14
working 20:9 27:2
 28:10 64:20 69:6,
 16, 18 82:20
 103:23 117:2
 124:23 132:21
 134:9 140:22
 156:21 166:3
 167:10 195:2
works 55:22
worth 107:9
wow 34:18
write 64:5 65:4
 74:6 75:2 88:12,
 18, 21 108:17
 111:14
writes 117:5
writing 56:1 78:6
 82:7 92:12 132:7
 147:13, 14
written 16:13 20:4
 48:18 54:4 117:1
 124:20 126:22
 147:11
wrong 99:22 124:1
wrote 74:23
 185:10 206:15

 < Y >
yards 155:18, 22
yardstick 142:10
year 14:1 16:2
 24:19 29:1, 4 33:5
 34:11 45:19 59:3
 63:13, 14 69:13, 15
 98:17 101:21
 102:11 107:17
 119:14 157:1, 4, 10,
 10 177:18, 21
 185:23

year-and-a-half

204:16

years 16:11, 12, 16

18:17 19:8 34:11,
23 35:17, 20 47:23

48:22 50:5 124:8

125:11 134:9

York 13:21 14:3

15:9, 14

you, 85:17

< Z >

zone 141:13 163:3,
6, 13, 19 164:18, 23

165:3 166:10, 19

167:1, 12

Page 214	Page 216
<p>1 UNITED STATES DISTRICT COURT</p> <p>2 NORTHERN DISTRICT OF ALABAMA</p> <p>3 SOUTHERN DIVISION</p> <p>4</p> <p>5 CASE NUMBER: 2:16-CV-01443-AKK</p> <p>6</p> <p>7 BLACK WARRIOR RIVERKEEPER, INC.,</p> <p>8 Plaintiff,</p> <p>9 vs.</p> <p>10 DRUMMOND COMPANY,</p> <p>11 Defendant.</p> <p>12</p> <p>13 DEPOSITION</p> <p>14 OF</p> <p>15 LOIS GEORGE</p> <p>16 (VOLUME 2, PAGES 214-312)</p> <p>17 June 27, 2018</p> <p>18</p> <p>19 REPORTED BY:</p> <p>20 Kimberly B. Dowdy, CSR, RPR</p> <p>21 Freedom Court Reporting</p> <p>22 2031 Shady Crest Drive</p> <p>23 Hoover, Alabama 35216</p>	<p>1 S T I P U L A T I O N S</p> <p>2 (Continued)</p> <p>3</p> <p>4 IT IS FURTHER STIPULATED AND AGREED that</p> <p>5 it shall not be necessary for any objections except</p> <p>6 as to form or leading questions, and that counsel</p> <p>7 for the parties may make objections and assign</p> <p>8 grounds at the time of the trial, or at the time</p> <p>9 said deposition is offered in evidence or prior</p> <p>10 thereto.</p> <p>11</p> <p>12 IT IS FURTHER STIPULATED AND AGREED that</p> <p>13 the notice of filing of the deposition by the</p> <p>14 Commissioner is waived.</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p>
Page 215	Page 217
<p>1 S T I P U L A T I O N S</p> <p>2</p> <p>3 IT IS STIPULATED AND AGREED by and between</p> <p>4 the parties through their respective counsel, that</p> <p>5 the deposition of LOIS GEORGE may be taken before</p> <p>6 Kimberly B. Dowdy, Commissioner, at 100 Brookwood</p> <p>7 Place, 7th Floor, Birmingham, Alabama, on the 27th</p> <p>8 day of June, 2018.</p> <p>9</p> <p>10 IT IS FURTHER STIPULATED AND AGREED that</p> <p>11 the signature to and the reading of the deposition</p> <p>12 by the witness is specifically NOT waived, the</p> <p>13 deposition to have the same force and effect as if</p> <p>14 full compliance had been had with all laws and</p> <p>15 rules of Court relating to the taking of</p> <p>16 depositions.</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p>	<p>1 A P P E A R A N C E S</p> <p>2</p> <p>3 APPEARING ON BEHALF OF THE PLAINTIFF:</p> <p>4 SOUTHERN ENVIRONMENTAL LAW CENTER</p> <p>5 BY: Mr. Barry Brock</p> <p>6 Ms. Christina Andreen</p> <p>7 2829 Second Avenue South, Suite 282</p> <p>8 Birmingham, Alabama 35233</p> <p>9</p> <p>10 Eva Dillard, Staff Attorney</p> <p>11 Black Warrior Riverkeeper, Inc.</p> <p>12 712 37th Street South</p> <p>13 Birmingham, Alabama 35222-206</p> <p>14</p> <p>15 APPEARING ON BEHALF OF THE DEFENDANT:</p> <p>16 STARNES DAVIS FLORIE, LLP</p> <p>17 BY: Mr. Richard E. Davis</p> <p>18 100 Brookwood Place, 7th Floor</p> <p>19 Birmingham, Alabama 35209</p> <p>20</p> <p>21 ALSO PRESENT: Jorge Solis, law clerk</p> <p>22 David Diab, law clerk</p> <p>23</p>

<p style="text-align: right;">Page 218</p> <p>1 I N D E X</p> <p>2</p> <p>3 EXAMINATION PAGE:</p> <p>4 By Mr. Brock 219</p> <p>5</p> <p>6 E X H I B I T S</p> <p>7</p> <p>8 Plaintiff's Exhibit No. 40.....229 (L. George Rebuttals to A. Brown's report)</p> <p>9 Plaintiff's Exhibit No. 41.....279 (L. George Rebuttals to G. Johnson's report)</p> <p>10 Plaintiff's Exhibit No. 42.....301 (Aerial of BW1, BW2, BW3, BW4 & BW5)</p> <p>11</p> <p>12</p> <p>13 ERRATA SHEET 310</p> <p>14 DEPONENT'S CERTIFICATE 311</p> <p>15 CERTIFICATE OF REPORTER 312</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p>	<p style="text-align: right;">Page 220</p> <p>1 can't promise you I won't repeat a question, but</p> <p>2 I'll try not to do that.</p> <p>3 What I really want to focus on today</p> <p>4 are your two reports, but as we go through that it</p> <p>5 may bring up some factual issues about things we</p> <p>6 discussed before, and if it does, we'll deal with</p> <p>7 that in that way.</p> <p>8 So we went through your resumé last</p> <p>9 time and we went through most of these reports, but</p> <p>10 I'm going to just put these over in front of you.</p> <p>11 Exhibit 1 is your first expert report and Exhibit 4</p> <p>12 is the second one. If you can just go ahead and</p> <p>13 take a look at those and confirm if that's true?</p> <p>14 A. I have looked through Exhibit 1</p> <p>15 Monday. So that one was fine. Exhibit 4 is my</p> <p>16 rebuttal report.</p> <p>17 Q. Is that a complete copy of it? I</p> <p>18 don't think there were any attachments or</p> <p>19 appendices or anything like that.</p> <p>20 A. No, there were not. It's a complete</p> <p>21 copy.</p> <p>22 Q. What I'm also going to do is put</p> <p>23 before you a copy of Anthony Brown's report because</p>
<p style="text-align: right;">Page 219</p> <p>1 I, Kimberly B. Dowdy, CSR, RPR, a</p> <p>2 Court Reporter and Notary Public of the State of</p> <p>3 Alabama, acting as Commissioner, do certify that on</p> <p>4 this date, as provided by the Alabama Rules of</p> <p>5 Civil Procedure and the foregoing stipulation of</p> <p>6 counsel, there came before me at 100 Brookwood</p> <p>7 Place, 7th Floor, Birmingham, Alabama, on June</p> <p>8 27th, 2018, beginning at 2:23 p m., LOIS GEORGE,</p> <p>9 witness in the above cause for oral examination,</p> <p>10 whereupon the following proceedings were had:</p> <p>11 LOIS GEORGE,</p> <p>12 after having been first duly sworn under oath, was</p> <p>13 examined and testified as follows:</p> <p>14 COURT REPORTER: Usual stipulations</p> <p>15 with read and sign?</p> <p>16 MR. DAVIS: Yes, ma'am.</p> <p>17 EXAMINATION BY MR. BROCK:</p> <p>18 Q. Ms. George, thank you for coming back</p> <p>19 to finish your deposition today. I'm sorry we</p> <p>20 couldn't finish it the first time, but I'll try to</p> <p>21 be as efficient as I can be, and if I ask you</p> <p>22 something I've already asked you, I apologize. I</p> <p>23 think I remember most of what we talked about but I</p>	<p style="text-align: right;">Page 221</p> <p>1 some of your report deals with his. I think it</p> <p>2 will be easier if we're able to refer to it as we</p> <p>3 did with Mr. Sisk.</p> <p>4 You have in front of you what we have</p> <p>5 marked as Exhibit 8 to Mr. Sisk's deposition this</p> <p>6 morning, which is a complete copy of Anthony</p> <p>7 Brown's expert report with all of the tables and</p> <p>8 figures, and some of those figures are referred to</p> <p>9 in your report, I believe, but we'll confirm that.</p> <p>10 Do you remember looking at his report</p> <p>11 and those figures that are attached?</p> <p>12 A. Yes. Yes, I do. The appendices</p> <p>13 aren't here, but we likely won't need those.</p> <p>14 Q. I hope not, but if we do, if there's</p> <p>15 something in there you want to look at we'll go</p> <p>16 find it.</p> <p>17 A. Thank you.</p> <p>18 Q. So on page four of Exhibit 1, if</p> <p>19 you'll turn to that page, we start off with a</p> <p>20 discussion there of interpretation of aerial</p> <p>21 photography and topographic maps, right?</p> <p>22 A. Yes, sir.</p> <p>23 Q. This was something that you testified</p>

Page 222

1 that you have some experience and expertise about?

2 A. Yes, sir.

3 Q. In particular, this is about Figures

4 8, 9, 10, 11 and 12 of the Brown report. If you

5 could turn to Figure 8, and you were questioned

6 here the methodology of review of the photos and

7 things that went into this figure. I know since

8 this there's been an additional report and a

9 response to that report. So do you recall, has

10 this issue been cleared up for you or do you still

11 have questions or criticisms about this Figure 8?

12 MR. DAVIS: Object to form.

13 A. Could we talk about them

14 collectively instead of individually?

15 Q. Sure.

16 A. My first comment was regarding the

17 methodology, and I don't believe that Mr. Brown

18 discussed his methodology of viewing and

19 interpreting the maps, how he was able to make

20 these outlines. He talked about -- in his

21 rebuttal he talked about the use of the

22 topographic maps but not the aerial photography.

23 Q. Are there particular methodologies or

Page 223

1 techniques that are recognized for review of aerial

2 photography that he could cite to or reference?

3 A. Certainly. And just a response as

4 to whether or not he looked at them on the

5 computer or stereoscopically or on paper.

6 Q. For the record, what does

7 stereoscopically mean?

8 A. A stereoscope is a viewing

9 instrument much like a pair of glasses, or can be

10 a larger instrument that looks like it has

11 binoculars on it and it allows you to look at

12 aerial photography stereo pairs, photography that

13 overlaps, and you can actually see it in three

14 dimension.

15 Q. Now, in his rebuttal report I believe

16 he indicated that the maps had been digitized as

17 part of this process. Does that help to answer the

18 question at all?

19 A. I believe he was talking about the

20 topographic mapping.

21 Q. Okay. And so you're saying he still

22 has not described in sufficient detail how he

23 reviewed the photographs?

Page 224

1 A. Correct.

2 Q. Now, you said you want to refer to the

3 figures as collectively. Was that a collective

4 comment that you were just --

5 A. That was one, yes.

6 Q. That would be applicable to all five

7 of the figures that we're talking about, 8 through

8 12?

9 A. That's right.

10 Q. Looking at Figure 8, as I understand

11 it, the red outlined area is the extent of the GOB

12 pile; is that the way you interpret it?

13 A. That's what he shows in the legend,

14 yes.

15 Q. And the yellow within the red circle

16 is meant to portray erosion of the GOB pile; is

17 that your understanding of it?

18 A. It is now, after his rebuttal

19 response where he discussed the distinction

20 between the red and the yellow. The application

21 of the lines on the map weren't discussed in his

22 initial report.

23 Q. Okay. I'm with you. And so the area

Page 225

1 that we see along the closest to the river in

2 yellow is meant to show erosion, but erosion

3 outside the GOB pile, correct?

4 A. Correct. And there are many other

5 areas on the photograph that he could have

6 outlined in yellow that are the results of

7 erosion.

8 Q. Where would those be in your view?

9 A. I'm not sure the 65 is -- on Figure

10 8 there are some gullies at other locations down

11 to the Locust Fork, but if you look down at the

12 end of the ridge, the south end of the ridge,

13 these are natural erosion gullies, these two

14 parallel lines.

15 Q. So you're gesturing to two parallel

16 lines down near the bottom of the part that's

17 within the red area on the photo?

18 A. That's correct. And I don't agree

19 with his delineation of the extent of the refuse

20 pile. I don't believe it goes this far south and

21 --

22 Q. Let's take those one at a time.

23 A. Okay.

Page 226

1 Q. So the first thing is you're saying
2 some of the area that he shows as erosion of GOB is
3 you say actually natural erosion or erosion of --
4 how did you put it?
5 A. No, I didn't say that it was erosion
6 of GOB. He just wasn't comprehensive in
7 assigning what was erosion. Up near the bend in
8 the Locust Fork he has these yellow outlined
9 erosion areas, but there are other areas on the
10 aerial outside of what he's assigned as GOB that
11 represent erosion. So why --
12 Q. We need to mark those.
13 A. -- have it here and not other areas,
14 I guess, is the point.
15 (Whereupon, a discussion was held off the
16 record.)
17 Q. Okay. As I understand your testimony,
18 you're saying in addition to the yellow areas shown
19 along the ridge outside the red circle to the
20 riverside of the GOB pile, there are additional
21 areas of erosion that could have been depicted?
22 A. Correct; that aren't associated with
23 the GOB pile.

Page 227

1 Q. Okay. Can you indicate where those
2 would be just by maybe drawing arrows to them?
3 A. Yeah. This photograph is a little
4 bit fuzzy but these areas are within his red area
5 delineating what he's calling the GOB. If you
6 recall yesterday that's the term that I was not
7 familiar -- well, I'm familiar with it, but we
8 did not use that term.
9 Q. Let me understand. So if I'm
10 understanding, you're saying the GOB pile actually
11 does not move as far south as he depicts it?
12 A. That's right.
13 Q. And it ends somewhere north of where
14 he shows the boundary?
15 A. That's correct.
16 Q. Can you draw a line approximately
17 where you think the GOB pile ends?
18 A. (Indicating). Something like that.
19 Q. What's your basis of that opinion?
20 A. Aerial photography, mapping by
21 Alabama By-Products, and the mapping that I
22 showed on Figure 1, which is Exhibit 6.
23 Q. The aerial photography, is that this

Page 228

1 photo that we're looking at in Figure 8?
2 A. Not this photo alone, but several of
3 the other photographs.
4 Q. Are the other photographs contained
5 within his stack of figures?
6 A. Yes.
7 Q. Can you tell us for the record which
8 other photographs you're basing it on when --
9 A. Figure 9 would have 1975 and 1987.
10 Q. What do you conclude by looking at
11 those two photographs?
12 A. That the area that he has delineated
13 to include the refuse pile is wooded at the time,
14 particularly in the 1975. The 1987 photograph is
15 a color infrared photograph and the red and pink
16 colors indicate vegetation. The refuse pile is
17 shown in the grays and the blues where there is
18 no vegetation.
19 Q. So if there's any vegetation shown on
20 this map, then that would mean that it's not
21 refuse?
22 A. Yes, in this particular area that
23 we're talking about that's between the refuse

Page 229

1 pile and the lower pond.
2 Q. With regard to the area that you're
3 talking about now that you're talking about an
4 error in his delineation of the pile, what did the
5 topographic maps indicate about elevations in that
6 area?
7 A. I'm not sure I understand what
8 you're asking.
9 Q. Did the elevation change up or down in
10 that area based on comparing the older maps to, I
11 think, the 1971 map, which was based on topography
12 from 1965, I think?
13 A. I'd like to refer to his Figure 14,
14 14 and 15 in his rebuttal report because he made
15 significant revisions to the interpretation of
16 the changes.
17 Q. Okay. So I don't think we marked this
18 previously, so we'll mark this Exhibit 40 to your
19 deposition. This is Mr. Brown's rebuttal report so
20 you can look at that and let us know what we need
21 to look at.
22 (Whereupon, Plaintiff's Exhibit Number 40
23 was marked for identification.)

<p style="text-align: right;">Page 230</p> <p>1 A. On Figure 14 Mr. Brown made 2 revisions to the map, I think, to reflect some of 3 my comments regarding the source of the maps that 4 he used but also changed the contour interval. 5 The contour interval of the topographic maps -- 6 and to a certain extent we're moving on to the 7 second opinion here, the contour maps of the USGS 8 maps are 20-foot contour maps. His first 9 presentation had 10-foot contours, 10-foot 10 contour interval, which would be an inaccurate 11 way to portray it since you can't make the map 12 more accurate than the initial maps were. 13 And that goes the same with the 14 topographic changes on Figure 15, which there was 15 no defined contour interval. And some of the 16 values just didn't correspond with the legend, so 17 Mr. Brown's Figure 15 is very different than the 18 original Figure 15. 19 Q. Is it different in terms of the 20 delineation of the extent of the GOB pile? 21 A. No, the red area that he used, I 22 guess, is his reference area is the same in all 23 the figures.</p>	<p style="text-align: right;">Page 232</p> <p>1 simply, what was the basis for your view that the 2 delineation of the southern end of the GOB pile was 3 incorrect and you answered that. Have you answered 4 that fully? 5 A. Yes, I think so. 6 Q. Still looking at page four of your 7 report, the last paragraph under the first section 8 in the second sentence, it says, the gullies are 9 the result of erosion of the steep natural 10 escarpment along the west bank of the Locust Fork." 11 Do you see that language? 12 A. Yes. 13 Q. And that's what you were telling us 14 earlier that you drew the arrows to demonstrate; am 15 I correct about that? 16 A. Yes. Those are the areas that he 17 had in yellow, but with Mr. Brown's explanation 18 of how he utilized the yellow versus the red, I 19 think this last paragraph is addressed also. 20 Q. The last paragraph is addressed to 21 what? 22 A. The last paragraph addresses the 23 question I had about what was outlined in yellow</p>
<p style="text-align: right;">Page 231</p> <p>1 Q. Okay. And I'm trying to understand. 2 So I understood your first criticism or comment 3 about Figure 8 that we started looking at, and the 4 second thing is, you said it was incorrectly 5 delineated down on the south end and you drew in 6 where you believe that the GOB pile footprint 7 should have been shown to end, right? 8 A. Correct. 9 Q. And then you made reference to 10 Exhibits -- to Figures 14 and 15 as being pertinent 11 to that point I thought. 12 A. Yes. I was answering your question 13 about the changes in the elevation that you 14 asked. 15 Q. How are Figures 14 and 15 pertinent to 16 this issue of the delineation of the southern end 17 of the GOB pile footprint? 18 A. Because those -- the red line 19 represents the area that Mr. Brown used for his 20 volumetric computations of how much was placed 21 and how much was eroded. 22 Q. Okay. You may have answered my 23 question, but it was, I think, or should have been</p>	<p style="text-align: right;">Page 233</p> <p>1 versus what was outlined in red. That wasn't 2 discussed in his report at all, the red and the 3 yellow. He clarified that in his rebuttal 4 report. In other words -- 5 Q. No, I'm with you. I understand. 6 A. Okay. 7 Q. Yeah, I think the first time around it 8 wasn't clear exactly what the red and the yellow 9 meant or included, right? 10 A. Not at all. 11 Q. And he clarified that in the rebuttal 12 report? 13 A. Yes, sir. 14 Q. The way that your report is 15 structured, this section is called "Findings and 16 Opinions", and it looks to me like each section 17 where there's bold single-spaced typed is a 18 separate opinion; is that correct? 19 A. Some are probably a combination of a 20 finding and an opinion. 21 Q. Okay. But my point is, you intended 22 to break it down that way based on these bold 23 headings?</p>

<p style="text-align: right;">Page 234</p> <p>1 A. Yes, sir.</p> <p>2 Q. And when I read through your report I</p> <p>3 put numbers beside them so that the one we just</p> <p>4 looked at would be number one. Then you come down</p> <p>5 to the next bold section that starts "The analysis</p> <p>6 of volumes", and I numbered that number two. So</p> <p>7 that would be the second opinion or conclusion that</p> <p>8 you're offering, right?</p> <p>9 A. Yes, sir.</p> <p>10 Q. And this relates to the volumetric</p> <p>11 calculations of the GOB pile, which you say are</p> <p>12 speculative?</p> <p>13 A. Yes, sir.</p> <p>14 Q. Right. Explain why you say that.</p> <p>15 A. Covered a little bit of that already</p> <p>16 talking about the contour intervals. Comparing a</p> <p>17 map that was prepared in 1938, which is a</p> <p>18 different scale. The topographic map from 1938</p> <p>19 was prepared at a scale of one to 62,000. The</p> <p>20 1971 topographic map is prepared at a scale of</p> <p>21 one to 24,000, so overlaying those and comparing</p> <p>22 the differences in the elevation, the precision</p> <p>23 of determining that difference in elevation is</p>	<p style="text-align: right;">Page 236</p> <p>1 different ages are, but to fit this number and</p> <p>2 back calculate, or however Mr. Brown came up with</p> <p>3 those numbers, is just purely assumption.</p> <p>4 Q. You have his rebuttal report as</p> <p>5 Exhibit 40, and what I want to do is let's look on</p> <p>6 page two at Rebuttal 1, Anthony Brown. And this is</p> <p>7 the part where he was provided more information</p> <p>8 about the topographic analysis, right?</p> <p>9 A. Yes.</p> <p>10 Q. And so after reading that do you</p> <p>11 question the methodology that aquilogic used?</p> <p>12 A. I don't question the methodology</p> <p>13 that they used for comparing the two topographic</p> <p>14 maps. I question the results of comparing the</p> <p>15 two topographic maps, as I described, different</p> <p>16 vintage, different scale, and the resulting</p> <p>17 accuracy, and then the application of that</p> <p>18 information.</p> <p>19 Q. Are you questioning the use of this</p> <p>20 Spatial Analyst software that he cites?</p> <p>21 A. No, not at all.</p> <p>22 Q. Then what --</p> <p>23 A. I'm not -- I'm not questioning the</p>
<p style="text-align: right;">Page 235</p> <p>1 somewhat questionable. That is the first portion</p> <p>2 of my critique.</p> <p>3 The second is the comparison of</p> <p>4 Mr. Brown's calculations from his original report</p> <p>5 to his rebuttal report had vast changes in his</p> <p>6 assumptions or how much was placed and how much</p> <p>7 was eroded up to three times the amount.</p> <p>8 Q. As I understood it, that was to</p> <p>9 account for the different number of years between</p> <p>10 when the photo was taken and the map was published.</p> <p>11 A. That is correct, but it's all based</p> <p>12 on assumption. In his first computations I</p> <p>13 believe the erosion rate was something like</p> <p>14 32,000, the second report it was 92 or 93,000</p> <p>15 cubic yards per year. Those are vast differences</p> <p>16 and the --</p> <p>17 Q. Well, you understand --</p> <p>18 A. -- volume --</p> <p>19 Q. I'm sorry. Go ahead.</p> <p>20 A. The information that was provided by</p> <p>21 the topographic changes, the net loss, that near</p> <p>22 700,000 cubic yards could be a difference between</p> <p>23 what the interpretation of these maps of very</p>	<p style="text-align: right;">Page 237</p> <p>1 application of the tools that they used to make</p> <p>2 the resulting maps. I'm questioning the accuracy</p> <p>3 of the resulting maps, again, because of the</p> <p>4 difference of the age of the maps, and the</p> <p>5 contour interval. And what I'm also questioning</p> <p>6 is Mr. Brown's application and use of that</p> <p>7 information that came out of that modeling.</p> <p>8 Q. So the first component of that has to</p> <p>9 do with the maps being at different scale and ages</p> <p>10 even if you digitize them, you're saying there</p> <p>11 could be an issue with that?</p> <p>12 A. Certainly. And just a change in</p> <p>13 accuracy of five feet over the whole acreage</p> <p>14 could make a difference of several hundred</p> <p>15 thousand cubic yards likely.</p> <p>16 Q. Have you made any independent</p> <p>17 calculation of what you think the volume of</p> <p>18 material is in the pre-law or post-law GOB areas?</p> <p>19 A. No, I haven't. Their numeric</p> <p>20 information isn't sufficient to do that.</p> <p>21 Q. Okay. If you were going to attempt to</p> <p>22 do that in 2017, how would you go about it?</p> <p>23 A. I haven't been asked to do that so I</p>

<p style="text-align: right;">Page 238</p> <p>1 really haven't given that consideration.</p> <p>2 Q. Is it possible to make an accurate</p> <p>3 calculation of the differential in volume in that</p> <p>4 pile as Mr. Brown has endeavored to do in his</p> <p>5 report?</p> <p>6 A. I think one could make</p> <p>7 determinations and it would be estimates of the</p> <p>8 distinction in the volume, and it would take some</p> <p>9 ground -- some drilling to measure the actual</p> <p>10 thickness. But to come up with a value for how</p> <p>11 much had eroded, I don't believe that there's</p> <p>12 information available to do that.</p> <p>13 Q. So just so I'm clear in understanding</p> <p>14 your testimony, you're just saying there isn't any</p> <p>15 data or information in the world that would allow</p> <p>16 you to make a calculation like that?</p> <p>17 MR. DAVIS: Object to form. You can</p> <p>18 answer.</p> <p>19 A. Well, let's look at the Maxine</p> <p>20 disposal area. The information that is available</p> <p>21 that I'm aware of doesn't include volume that</p> <p>22 Alabama By-Products placed in these areas over</p> <p>23 the years. And in order to make determinations</p>	<p style="text-align: right;">Page 240</p> <p>1 think of that PELA used in connection with its</p> <p>2 volumetric calculations?</p> <p>3 A. Not that I can think of.</p> <p>4 Q. If you turn to page five in your</p> <p>5 report, opinion or conclusion, Number 3 starts "Mr.</p> <p>6 Brown's assertions about hydrologic flow</p> <p>7 calculations." Do you see that part?</p> <p>8 A. I think that would be Number 4.</p> <p>9 Q. What would Number 3 be?</p> <p>10 A. That Mr. Johnson relies on Mr.</p> <p>11 Brown's interpretations, conclusions, and</p> <p>12 opinions. And if Mr. Brown's are flawed,</p> <p>13 Mr. Johnson's interpretations, opinions, and</p> <p>14 conclusions are also flawed.</p> <p>15 Q. Okay.</p> <p>16 A. He accepts them and says it numerous</p> <p>17 times in his 2017 report and his 2018 report.</p> <p>18 Q. No question. That's straightforward.</p> <p>19 I understand there, if Brown's wrong, then</p> <p>20 Johnson's wrong because he relied on him. That's</p> <p>21 it?</p> <p>22 A. Yes.</p> <p>23 Q. All right. So moving down to Number</p>
<p style="text-align: right;">Page 239</p> <p>1 of erosion it was being placed and potentially</p> <p>2 eroded at the same time under different</p> <p>3 climatological conditions, under different</p> <p>4 compaction rates, different slopes. To apply one</p> <p>5 value to the whole area for erosion over 365 days</p> <p>6 really is just assumption.</p> <p>7 Q. How did PELA perform its volumetric</p> <p>8 calculations when it did those back in the '80's?</p> <p>9 A. To the best of my recollection, this</p> <p>10 was done in the early '80's. Our calculations</p> <p>11 were limited to -- may I refer to Exhibit 6?</p> <p>12 Q. Yes, absolutely.</p> <p>13 A. The area between the lower dam and</p> <p>14 somewhere between the upper dam and MO3, we used</p> <p>15 elevations from existing USGS topographic maps,</p> <p>16 the detailed topographic mapping that was</p> <p>17 provided by Alabama By-Products, I don't recall</p> <p>18 the date, but in addition to that we had two</p> <p>19 drill holes that indicated the thickness of the</p> <p>20 material. And the volume we came up was just an</p> <p>21 estimate for what was there at that time based on</p> <p>22 that data.</p> <p>23 Q. Well, was there anything else you can</p>	<p style="text-align: right;">Page 241</p> <p>1 4, you say that Mr. Brown failed to consider storm</p> <p>2 runoff in his analysis. Explain that for us.</p> <p>3 A. Mr. Brown, and I believe Mr. Johnson</p> <p>4 also, referred to different flow potentials</p> <p>5 through the valley and relate that to the quality</p> <p>6 of water that might be discharging into the</p> <p>7 Locust Fork. The language used in the report.</p> <p>8 In my opinion, didn't account for the fact that</p> <p>9 when you have peak flows, the residence time of</p> <p>10 that rain water and runoff would not be</p> <p>11 comparable to any waters that have been</p> <p>12 tested that --</p> <p>13 Q. Is this an issue -- I'm sorry. Go</p> <p>14 ahead.</p> <p>15 A. -- that are in the valley fill. So</p> <p>16 relative to any consideration of handling or</p> <p>17 treating, I felt that there was not a</p> <p>18 representation of conditions that occurred or</p> <p>19 could occur.</p> <p>20 Q. So is this an issue about</p> <p>21 concentration of chemicals in the flow -- in the</p> <p>22 discharge being affected by the rate of flow?</p> <p>23 A. Yes, but also the characterization</p>

<p style="text-align: right;">Page 242</p> <p>1 of the potential volume that might be going out 2 into the Locust Fork.</p> <p>3 Q. Did you see the volume calculations 4 that were performed by Amec Foster Wheeler, 5 Drummond's consultants?</p> <p>6 A. I think I saw the end result of 7 them. I didn't look at the calculations 8 themselves.</p> <p>9 Q. I was just wondering if you had any 10 criticism of their methodology?</p> <p>11 MR. DAVIS: Object to the form.</p> <p>12 A. I don't have an opinion regarding 13 that, no.</p> <p>14 Q. Are you expressing criticisms of 15 questions about the methodology that Mr. Brown and 16 Mr. Johnson used to arrive at the flow 17 calculations?</p> <p>18 A. No, and I'm not sure they actually 19 made the flow calculations. What my criticism 20 is, is about the characterization of the amount 21 of water and the characterization of its 22 character being toxic and not considering the 23 retention time with storm events.</p>	<p style="text-align: right;">Page 244</p> <p>1 assumptions in and get your number crunch and get 2 results that are based purely on assumption. I 3 don't think there's enough information to be able 4 to do that at this point.</p> <p>5 Q. So the next conclusion or opinion, 6 Number 5, would be at the bottom of the page. Tell 7 us what that one is, please.</p> <p>8 A. Yes, sir. It's essentially 9 consistent with Number 4 above.</p> <p>10 Q. Your next conclusion or opinion at the 11 top of page six relates to Mr. Brown's Key Opinion 12 1, right?</p> <p>13 A. Yes, sir.</p> <p>14 Q. What is his Key Opinion 1?</p> <p>15 A. On page two that you've opened Mr. 16 Brown's October 2017 report to, indicates that 17 his key opinion is -- or question, that he, I 18 guess, is answering, "Have operations at the 19 Drummond Maxine Mine site physically altered 20 natural surface water streams?"</p> <p>21 Q. As I read your criticism, you're 22 questioning the use of the term flow 23 characteristics?</p>
<p style="text-align: right;">Page 243</p> <p>1 Q. Well, if you take a sample at the 2 point where water from the site -- surface water is 3 discharging to the Locust Fork, wouldn't that 4 sample tell you what the concentration or the water 5 chemistry of the discharge is?</p> <p>6 A. At a specific time, yes.</p> <p>7 Q. Have you made any sort of calculations 8 or analysis to try to account for what differences 9 there might be in a sample like that based on flow 10 conditions?</p> <p>11 A. No, I haven't.</p> <p>12 Q. Is there a methodology or procedure 13 that can be used to do that?</p> <p>14 A. It likely could be modeled, yes.</p> <p>15 Q. So in other words, if you take a 16 sample and you say the flow today is ten gallons 17 per minute and this is the water chemistry, that 18 you might be able to model it to say if the flow 19 was a hundred gallons per minute what impact would 20 it have on the water chemistry?</p> <p>21 A. You might be able to if you had 22 sufficient data. Of course, some modeling is 23 based on assumption and you can put your forward</p>	<p style="text-align: right;">Page 245</p> <p>1 MR. DAVIS: Object to form.</p> <p>2 A. Yes.</p> <p>3 Q. Can you explain what you mean by that?</p> <p>4 A. Well, I don't know what Mr. Brown 5 means by flow characteristics, and I was 6 referring to his discussions within the report 7 where he says that the flow characteristics have 8 been altered. Flow characteristics would mean 9 the -- there's something that has changed in the 10 stream to change the way the water flows.</p> <p>11 Q. Would a change in the bottom elevation 12 change the flow characteristics?</p> <p>13 A. Yes. Change in bottom elevation, 14 deposits of stream bars along the edge of the 15 bank of the river.</p> <p>16 Q. But if there were deposits of 17 nonnatural river bottom materials on the bottom of 18 the Locust Fork would that change the flow 19 characteristics?</p> <p>20 MR. DAVIS: Object to the form.</p> <p>21 Foundation.</p> <p>22 A. It would depend on their thickness, 23 where they were, and natural deposits could do</p>

Page 246

1 the same thing. Mr. Brown doesn't define what he
2 means and doesn't provide any information to
3 address that.
4 Q. Okay. But could you answer my
5 question, which was, if you did deposit nonnatural
6 material from the mine site on the bottom of the
7 Locust Fork, would it change the flow
8 characteristics?
9 MR. DAVIS: Object to the form.
10 A. I think I answered that when I said
11 it could depending on the thickness.
12 Q. Have you made any assessment about
13 whether there are such materials on the bottom of
14 the Locust Fork adjacent to the mine site?
15 MR. DAVIS: Object to form.
16 A. I have looked at information that
17 indicates to me that there are no obstructions or
18 thicknesses of either natural deposits or
19 deposits that may have come from the refuse pile
20 that have changed the configuration of the Locust
21 Fork.
22 Q. What materials have you looked at that
23 indicate that?

Page 247

1 A. The studies that PELA did in the
2 early 1980's.
3 Q. Would the conditions have changed
4 since the 1980's?
5 A. Yes. And I think that conditions
6 regarding the rock disposal area have changed
7 such that erosion would have decreased over the
8 years. I've also looked at the information of
9 Lynn Sisk where they did water quality and
10 measured the depth of water and showed the
11 configuration of the bottom of the Locust Fork.
12 I believe his investigations were completed in
13 2016, 2017.
14 Q. What did Mr. Sisk say, if anything,
15 about deposits of material on the bottom of the
16 Locust Fork?
17 A. I don't recall reading about what he
18 said but the diagrams that were made don't
19 indicate that there are any obstructions.
20 Q. Okay.
21 A. The bottom has a relative uniform
22 shape to it throughout the whole area where the
23 bottom was measured.

Page 248

1 Q. If I'm understanding your testimony
2 you said you believe that the rate of erosion has
3 decreased at some point?
4 A. Yes.
5 Q. So you're comparing now to what point
6 in the past?
7 A. Well, obviously based on my
8 knowledge when PELA started working at the site,
9 there is a lot of --
10 Q. Let's try to break it down.
11 A. Okay.
12 Q. You're giving an opinion that the rate
13 of erosion is less now than it was in 1984 when you
14 were last working on the site?
15 A. Yes.
16 Q. What is your basis for that? Any
17 scientific or factual basis?
18 A. My observations of the aerial
19 photography that indicate that the majority of
20 the area is vegetated, and also my site visit.
21 Q. And now the second question, are you
22 giving an opinion that sediment from the mine site
23 currently is not eroding into the Locust Fork?

Page 249

1 A. Sure there's sediment into the
2 Locust Fork, not only from limited areas that may
3 get there from the refuse pile, but there's also
4 erosion from the natural bedrock that is exposed.
5 Q. So you said sure, there's erosion from
6 the site. So my follow-up question is, do you know
7 how much?
8 A. No. No, I don't. Not
9 quantitatively, no --
10 Q. And is it an efficient quantity to
11 affect the flow characteristics?
12 A. I don't know quantitatively, no, but
13 from looking at the data I don't believe there's
14 sufficient information -- I mean, sufficient
15 sediment that would make any obstruction.
16 Q. What data?
17 A. I just described that. The data
18 from PELA studies, the data from Mr. Sisk's
19 studies, and I hadn't finished my answer to your
20 question. Dr. Dimova's studies. Dr. Dimova
21 sampled a limited number of sites based on the
22 latitude and longitude of the coordinates that
23 were given. The locations of her sample sites

<p style="text-align: right;">Page 250</p> <p>1 were very close to the shoreline and would not be 2 indicative of the entire channel of the Locust 3 Fork. 4 Q. So I got PELA's data from the '80's, 5 Mr. Sisk's data, and Dr. Dimova's data. Anything 6 else? 7 A. My observations. 8 Q. Observations of photographs or 9 observations of the site? 10 A. Both. 11 Q. The next opinion, I guess, would be 12 Number 7 there in the middle of the page, has to do 13 with restoration. Are you with me? 14 A. Yes, sir. 15 Q. Okay. And as I'm paraphrasing your 16 opinion there you're saying based on the data from 17 testing upstream and downstream that the 18 remediation recommended by Mr. Johnson and Brown is 19 not warranted. 20 A. Yes. 21 Q. Is that a correct paraphrase? 22 A. Yes. 23 Q. Okay. What specific remediation</p>	<p style="text-align: right;">Page 252</p> <p>1 A. Yes. 2 Q. None whatsoever? 3 A. There may be a limited area of 4 mixing zone, but when you look at the information 5 that's -- all the information upstream and the 6 information downstream, there is no impact 7 indicated. 8 Q. Have you looked at sampling results of 9 the discharge that's actually leaving the mine 10 site? 11 A. I've looked at testing that was 12 documented in Mr. Brown's report. I have looked 13 at the water quality information that was 14 documented in PELA's report, and the 15 investigation that we completed of the specific 16 conductance values at the Locust Fork. Yes, I 17 have. 18 Q. Okay. And in connection with this 19 Opinion Number 7, is this confined to the Locust 20 Fork or are you opining also about any harm or 21 impact to Tributary 1? 22 A. My opinion as written here is based 23 on the information of the Locust Fork.</p>
<p style="text-align: right;">Page 251</p> <p>1 though are you referring to there? 2 A. Restoring the site to natural 3 conditions by removal of all the refuse material. 4 Q. Are you saying that no mitigation is 5 warranted based on those two water samples? 6 A. Yes, based on the fact that the 7 information indicates that there is no impact on 8 the stream. 9 Q. What about inshore or near-shore 10 impact on macroinvertebrates and other organisms; 11 have you considered that? 12 MR. DAVIS: Object to the form. 13 Foundation. You can answer. 14 A. I have reviewed the information that 15 I think you're referring to, the expert reports. 16 I think the water quality is what I'm referring 17 to. And the water quality obviously is the 18 environment that the organisms live in, but my 19 opinion is based on the water quality. 20 Q. And is it your opinion that there is 21 no adverse impact on the water quality in the 22 Locust Fork from any discharges from the Maxine 23 Mine?</p>	<p style="text-align: right;">Page 253</p> <p>1 Q. Next, and I guess the last area of 2 opinion in this report, Number 8, pertains to 3 certain regulatory actions; is that correct? 4 A. Yes, sir. Regulatory actions and 5 also activities that were completed in the rock 6 disposal area. 7 Q. And you conclude the section with 8 reference to an order from the Surface Mining 9 Commission from 1985 down at the bottom of the 10 page; do you see that? 11 A. Yes, sir. 12 Q. What does an administrative order do 13 to inform your opinion as to a geologist about any 14 scientific issue presented in this case? 15 MR. DAVIS: Object to the form. 16 A. I think I answered that yesterday. 17 The document -- 18 MR. DAVIS: Monday. 19 MR. BROCK: Monday. 20 A. Seems like yesterday. 21 Q. Seems like a month ago to me, but go 22 ahead. 23 A. The order itself was used as a frame</p>

<p style="text-align: right;">Page 254</p> <p>1 of chronological reference but also the fact that</p> <p>2 the document indicated that the activities were</p> <p>3 completed and satisfied the regulatory</p> <p>4 requirements at the time.</p> <p>5 Q. And we talked about this yesterday</p> <p>6 and --</p> <p>7 MR. DAVIS: Monday.</p> <p>8 Q. Monday. And I don't need to reiterate</p> <p>9 it all, but the segregation of the surface water</p> <p>10 runoff from the post-law area as Drummond calls it</p> <p>11 from the pre-law area, that was done as I</p> <p>12 understood your earlier testimony, really based on</p> <p>13 legal or regulatory reasons; in other words, what</p> <p>14 ABC believed that it was legally obligated to do;</p> <p>15 is that correct?</p> <p>16 MR. DAVIS: Object to the form.</p> <p>17 Foundation.</p> <p>18 A. I'm not sure I can answer it the way</p> <p>19 you asked it. But it's my understanding that the</p> <p>20 actions that were completed were completed to</p> <p>21 address notices of violation, an order, and</p> <p>22 permit requirements, and those were all</p> <p>23 satisfied.</p>	<p style="text-align: right;">Page 256</p> <p>1 right?</p> <p>2 A. Yes.</p> <p>3 Q. Let's be honest about it, the data</p> <p>4 that was taken at SW3 that showed the runoff from</p> <p>5 the east ditch being captured from the pre-law GOB</p> <p>6 pile was vastly different than the data taken from</p> <p>7 the runoff from the post-law GOB pile, wasn't it?</p> <p>8 MR. DAVIS: Object to form and</p> <p>9 foundation.</p> <p>10 A. There was a difference in the</p> <p>11 measurements, yes, and site.</p> <p>12 Q. There was difference of orders of</p> <p>13 magnitude, wasn't there?</p> <p>14 MR. DAVIS: Object to form and</p> <p>15 foundation.</p> <p>16 A. May we look at the tables again,</p> <p>17 please?</p> <p>18 Q. Sure. This is Exhibit 36 that we</p> <p>19 looked at on Monday and I think you testified was</p> <p>20 the last report that PELA did of water quality.</p> <p>21 I'm going to show it to you in just a minute. And</p> <p>22 I'm comparing SW2 is the runoff that came from the</p> <p>23 post-law area. Can you confirm that?</p>
<p style="text-align: right;">Page 255</p> <p>1 Q. Right. And what I'm asking is, that</p> <p>2 was done for legal reasons as opposed to scientific</p> <p>3 reasons?</p> <p>4 MR. DAVIS: Object to the form.</p> <p>5 Foundation.</p> <p>6 A. The reasons the activities were</p> <p>7 completed, yes, were legal reasons. But there</p> <p>8 were scientific design and investigations that</p> <p>9 were completed to address that.</p> <p>10 Q. Right, and those investigations were</p> <p>11 designed to establish that the post-law runoff was</p> <p>12 a lot cleaner than the pre-law runoff, right?</p> <p>13 MR. DAVIS: Object to the form.</p> <p>14 Foundation.</p> <p>15 A. No. The investigations were done</p> <p>16 to -- well, initially the investigations were</p> <p>17 done to provide a guide as to how to move forward</p> <p>18 to address satisfying the NOV's and the</p> <p>19 regulatory requirements. The monitoring that was</p> <p>20 done for about a year after the reclamation was</p> <p>21 completed was provided to the agency for their</p> <p>22 review to make those decisions.</p> <p>23 Q. And we looked at the data on Monday,</p>	<p style="text-align: right;">Page 257</p> <p>1 A. Yes.</p> <p>2 Q. And SW3 is the data for the runoff</p> <p>3 that came off the pre-law area, correct?</p> <p>4 A. Yes.</p> <p>5 Q. And on these figures, laboratory</p> <p>6 analysis for total iron, would you tell us what the</p> <p>7 reading is for SW2 versus SW3?</p> <p>8 A. Total iron in milligrams per liter</p> <p>9 for SW2 is 1.9 and for SW3 is 501.</p> <p>10 Q. Would that be a difference in orders</p> <p>11 of magnitude?</p> <p>12 A. Yes.</p> <p>13 Q. Would there be a scientific reason</p> <p>14 that you can think of why you would have that</p> <p>15 disparity and leave the site that way?</p> <p>16 MR. DAVIS: Object to the form.</p> <p>17 A. The information in this report was</p> <p>18 gathered to address the regulatory or legal</p> <p>19 requirements at the time.</p> <p>20 Q. Okay. That's all I was asking.</p> <p>21 You've answered the question. Thank you.</p> <p>22 Please turn to page seven in your</p> <p>23 report, if you would. On that same topic, if you</p>

<p style="text-align: right;">Page 258</p> <p>1 look at the paragraph in the middle of the page</p> <p>2 that starts, "The October 5, 1984 report"?</p> <p>3 A. Yes.</p> <p>4 Q. If you could take a second just to</p> <p>5 read that to yourself and let me know when you've</p> <p>6 read it.</p> <p>7 A. Yes, sir.</p> <p>8 Q. And this refers to that report we were</p> <p>9 just looking at, right, Exhibit 36?</p> <p>10 A. Yes.</p> <p>11 Q. It says that work was completed by ABC</p> <p>12 in fulfillment of the requirements of ASMC. Do you</p> <p>13 see that part?</p> <p>14 A. Yes.</p> <p>15 Q. Where were those requirements set</p> <p>16 forth?</p> <p>17 A. I believe in the Notice of</p> <p>18 Violations but I'm not certain.</p> <p>19 Q. Anywhere else that you can think of?</p> <p>20 A. Permitting requirements but that</p> <p>21 still might be ASMC. It would be, excuse me,</p> <p>22 ASMC.</p> <p>23 Q. I'm sorry. Did you say permitting?</p>	<p style="text-align: right;">Page 260</p> <p>1 A. We concluded --</p> <p>2 Q. I'm sorry. Go ahead.</p> <p>3 A. We concluded our tasks and</p> <p>4 documented it, and it's my understanding this</p> <p>5 document was provided to ASMC.</p> <p>6 Q. Exhibit 36 when you say this document?</p> <p>7 A. I'm sorry. Yes, Exhibit 36. With</p> <p>8 all of the other progress reports and permit</p> <p>9 application and everything.</p> <p>10 Q. In 1984 you knew what the Clean Water</p> <p>11 Act was, right?</p> <p>12 A. Yes, sir.</p> <p>13 Q. And I'm asking did it ever occur to</p> <p>14 you upon leaving the site in 1984 that there might</p> <p>15 be Clean Water Act liability issues in the future</p> <p>16 given the water chemistry that we see in this data</p> <p>17 coming off of that GOB pile?</p> <p>18 MR. DAVIS: Object to the form and</p> <p>19 foundation.</p> <p>20 A. I think it's a legal --</p> <p>21 MR. DAVIS: And to the extent that it</p> <p>22 calls for a legal conclusion.</p> <p>23 Q. My question was: Did that ever occur</p>
<p style="text-align: right;">Page 259</p> <p>1 A. Permitting requirements.</p> <p>2 Q. I think I asked you this yesterday but</p> <p>3 I'm going to ask you again in reference to this</p> <p>4 material, and that portion of your report. Was</p> <p>5 there any discussion to your recollection of future</p> <p>6 Clean Water Act issues or obligations in connection</p> <p>7 with the discussion of the regulatory requirements?</p> <p>8 MR. DAVIS: Object to the form.</p> <p>9 A. I'm not understanding your question.</p> <p>10 I know we talked about a lot of different things</p> <p>11 regarding that, but I'm not sure I understand.</p> <p>12 Q. In connection with discussing the</p> <p>13 requirements of ASMC or the regulators during this</p> <p>14 timeframe, you're talking about 1984, was there</p> <p>15 ever any mention of the Clean Water Act or future</p> <p>16 obligations under the Clean Water Act?</p> <p>17 MR. DAVIS: Object to the form.</p> <p>18 A. I certainly don't remember any</p> <p>19 discussions about future obligations.</p> <p>20 Q. Was that something that PELA</p> <p>21 considered in any way?</p> <p>22 A. Not to my recollection, no.</p> <p>23 Q. You knew --</p>	<p style="text-align: right;">Page 261</p> <p>1 to you?</p> <p>2 MR. DAVIS: Same objection. He wants</p> <p>3 you to give a legal opinion today that he wouldn't</p> <p>4 let you give last Monday. Go ahead and answer</p> <p>5 subject to the objection.</p> <p>6 A. I don't recall, no, sir. We</p> <p>7 finished our job.</p> <p>8 Q. You don't remember if that ever</p> <p>9 occurred to you or not?</p> <p>10 MR. DAVIS: Same objection.</p> <p>11 A. No, sir, I don't remember.</p> <p>12 Q. Let's take a quick break.</p> <p>13 (Whereupon, a break was taken at 3:33 p.m.)</p> <p>14 Q. We are back on the record, Ms. George.</p> <p>15 I turned in your first report to the section on</p> <p>16 References, Section 8.</p> <p>17 A. Yes, sir.</p> <p>18 Q. And I had a few questions about some</p> <p>19 of those. The second item on there you list as the</p> <p>20 Risk-Based Corrected Action Guidance Manual.</p> <p>21 A. Yes, sir.</p> <p>22 Q. How did you use that in formulating</p> <p>23 your opinions or drafting your report?</p>

<p style="text-align: right;">Page 262</p> <p>1 A. I didn't make a specific use of any 2 specific section of it. I'm very familiar with 3 it. And in order to move forward with 4 remediation it's typical that some sort of risk 5 is evaluated.</p> <p>6 Q. Are there any particular sections or 7 pages out of that manual that you think are 8 applicable to your report in this case?</p> <p>9 A. Well, just the fact that you really 10 need sufficient data to move forward to put 11 together a conceptual model, to evaluate risks, 12 to make decisions about how to remediate. And I 13 can't tell you specifically what section in that 14 guidance is those --</p> <p>15 Q. Do you believe there's a need for 16 additional data as to Maxine Mine to make an 17 assessment about remediation?</p> <p>18 A. If there were to be remediation 19 there's not enough data right now to make a 20 conclusion what's the best way to remediate.</p> <p>21 Q. What additional data would you 22 recommend?</p> <p>23 A. Well, there could be pilot tests</p>	<p style="text-align: right;">Page 264</p> <p>1 of the waste pile. Has the water chemistry 2 improved recently since the '80's?</p> <p>3 A. I'm sorry. You were talking about 4 the runoff not the actual waste pile itself?</p> <p>5 Q. Yes.</p> <p>6 A. Based on sampling at specific 7 points, no. It's fairly consistent.</p> <p>8 Q. Is there any reason to believe that it 9 will improve naturally in the future without some 10 remedial action being taken?</p> <p>11 MR. DAVIS: Object to the form and 12 foundation.</p> <p>13 A. Again, are we referring to a 14 specific location?</p> <p>15 Q. Not in that question. I'm just 16 talking about to any surface water runoff off of 17 the pre-law waste pile. Is it going to improve in 18 the future without any corrective action being 19 taken?</p> <p>20 MR. DAVIS: Object to the form and 21 foundation, and to the extent it calls for 22 speculation.</p> <p>23 A. And I certainly can't answer based</p>
<p style="text-align: right;">Page 263</p> <p>1 completed.</p> <p>2 Q. What do you mean by that?</p> <p>3 A. A pilot test is an experiment on a 4 certain theory or an area to see whether or not 5 an application might work.</p> <p>6 Q. How would that work or how would you 7 conceive that might be applicable to Maxine?</p> <p>8 A. It could be applicable to the low 9 flat areas in the vicinity of the two dams.</p> <p>10 Q. What sort of pilot program would you 11 conceive of?</p> <p>12 A. I don't have anything specific. I 13 haven't been asked to make any formulations nor 14 have I.</p> <p>15 Q. Based on the data that we looked at 16 from PELA's water sampling in the 1980's to now, 17 has the water chemistry improved on the pre-law 18 waste pile area?</p> <p>19 MR. DAVIS: Object to the form.</p> <p>20 A. I'm not sure there is any data 21 specifically on the pre-law waste data.</p> <p>22 Q. I'm talking about like SW8 and SW9 23 that are measuring the discharges off of that area</p>	<p style="text-align: right;">Page 265</p> <p>1 on any runoff. The runoff is going to be 2 dependent on rainfall, climatological conditions.</p> <p>3 Q. Are there any natural processes that 4 are going to improve the water chemistry of the 5 runoff coming off the pre-law GOB file?</p> <p>6 MR. DAVIS: Same three objections.</p> <p>7 A. Further natural revegetation that's 8 occurred since Alabama By-Products completed 9 their remediation.</p> <p>10 Q. Has the vegetation increased since the 11 1980's from then to now?</p> <p>12 A. Yes, substantially.</p> <p>13 Q. And as you just said though, the 14 sampling data has not improved with the vegetation 15 increasing, has it?</p> <p>16 MR. DAVIS: Object to form. 17 Foundation.</p> <p>18 A. It depends on where the samples are 19 taken and under what circumstances.</p> <p>20 Q. Well, that was really a yes or no 21 question. Have the sampling data improved as the 22 vegetation has become -- has increased on the site?</p> <p>23 MR. DAVIS: Object to the form and</p>

<p style="text-align: right;">Page 266</p> <p>1 foundation; and I think she answered it.</p> <p>2 Q. He doesn't want you to answer that</p> <p>3 question. He really doesn't want you to answer.</p> <p>4 MR. DAVIS: No, he really doesn't want</p> <p>5 you to answer yes or no to the question in which</p> <p>6 sampling points are not specified and not specified</p> <p>7 to be --</p> <p>8 Q. You can answer yes or no and then</p> <p>9 explain.</p> <p>10 MR. DAVIS: If you can.</p> <p>11 Q. And the question is the vegetation has</p> <p>12 increased, the sampling results have not improved,</p> <p>13 correct?</p> <p>14 A. I understand your question.</p> <p>15 MR. DAVIS: Object to form.</p> <p>16 Foundation.</p> <p>17 A. At certain locations at certain</p> <p>18 points in time you could say there is comparable</p> <p>19 results; however, they are just points in time</p> <p>20 and specific climatological conditions.</p> <p>21 Q. The ADEM Investigation and Remediation</p> <p>22 Guidance Manual, how did you use that in connection</p> <p>23 with your opinions in your report?</p>	<p style="text-align: right;">Page 268</p> <p>1 making available copies, and some of the references</p> <p>2 you listed we could not find them publicly</p> <p>3 available online so I just want to ask, I guess, if</p> <p>4 you have a copy if we wanted to get it that you</p> <p>5 could get it to Richard or something like that.</p> <p>6 The first one is on the top of page 13. It says</p> <p>7 it's Alabama coal data for 1993.</p> <p>8 A. It's a Geological Survey</p> <p>9 publication. It should be available to the</p> <p>10 public, but I'll be glad to --</p> <p>11 MR. DAVIS: You can copy and provide</p> <p>12 it to me and I'll give them a copy.</p> <p>13 A. Okay.</p> <p>14 Q. And when it says 136p does that mean</p> <p>15 you were looking at that page or does that mean</p> <p>16 that's how many pages are in the document?</p> <p>17 A. It's the number of pages in the</p> <p>18 document.</p> <p>19 Q. So we can't tell from that what you</p> <p>20 actually looked at within it?</p> <p>21 A. No.</p> <p>22 Q. That's not a pinpoint site in other</p> <p>23 words?</p>
<p style="text-align: right;">Page 267</p> <p>1 A. Pretty much in concert with the same</p> <p>2 way as the risk assessment. This guidance</p> <p>3 document specifies different -- the approaches</p> <p>4 that are taken or required for investigations,</p> <p>5 and steps to hone down the feasibility of</p> <p>6 remediation, then the selection of remediation.</p> <p>7 Q. Did you use it though in connection</p> <p>8 with any one of those eight opinions we identified</p> <p>9 in particular?</p> <p>10 A. I don't know what number it might</p> <p>11 be, but there is a part to the opinion on page</p> <p>12 six, the middle of the page, regarding</p> <p>13 restoration of the site to natural condition.</p> <p>14 Q. Okay. You list an ADEM Administrative</p> <p>15 Code provision about Brownfield redevelopment. How</p> <p>16 did you use that in connection with this report?</p> <p>17 A. I think the same. Just a foundation</p> <p>18 for requirement for investigation and a process</p> <p>19 to come to the final results of any remediation.</p> <p>20 Q. Some of these references, and this is</p> <p>21 not something you were necessarily a party to, but</p> <p>22 we have an agreement in the case as to things that</p> <p>23 are publicly available we are not exchanging, or</p>	<p style="text-align: right;">Page 269</p> <p>1 A. No, it is not.</p> <p>2 Q. For any of these do you actually have</p> <p>3 copies of them?</p> <p>4 A. Oh, yes. Some of them are personal</p> <p>5 copies.</p> <p>6 Q. Okay. The next one though, Samuel</p> <p>7 Cassidy, Elements of Practical Coal Mining, is that</p> <p>8 a book?</p> <p>9 A. Yes, it is.</p> <p>10 Q. And you have a copy of that?</p> <p>11 A. Yes, I do.</p> <p>12 Q. About halfway down the page Henry</p> <p>13 McCalley, report on the Warrior coal basin. Do you</p> <p>14 have a copy of that?</p> <p>15 A. I have a reproduction of it, yes, a</p> <p>16 reprint of it. Yes.</p> <p>17 Q. And the next one too, Metzger, do you</p> <p>18 have a copy of that?</p> <p>19 A. I believe I do. If I don't, PELA</p> <p>20 has a copy, I believe, in our library.</p> <p>21 Q. And you're citing these things, does</p> <p>22 that indicate that you just looked at some part of</p> <p>23 it, it's like background information, or did you</p>

<p style="text-align: right;">Page 270</p> <p>1 rely on it in a more substantial way in drafting</p> <p>2 the report?</p> <p>3 A. Background information, just to</p> <p>4 refamiliarize myself with parts of the Warrior</p> <p>5 Basin and coal seams, the strata.</p> <p>6 Q. On page 14 there are two that we</p> <p>7 couldn't locate. The first is Szabo & Copeland</p> <p>8 Geologic map. Do you have a copy of that?</p> <p>9 A. I believe I have the digital</p> <p>10 downloaded copy. The original paper copies are</p> <p>11 larger than the table.</p> <p>12 Q. And then the next one, William</p> <p>13 Thornbury, Principles of Geomorphology, is that a</p> <p>14 book you have a copy of?</p> <p>15 A. It's a textbook. I have it.</p> <p>16 Q. Did that play into any of the eight</p> <p>17 particular opinions in your report?</p> <p>18 A. Again, just used to look up some</p> <p>19 terminology regarding stream geomorphology.</p> <p>20 Q. All right. We can close that one up</p> <p>21 and move to Exhibit 4, your rebuttal report of PELA</p> <p>22 dated May 25, 2018. You looked at that earlier and</p> <p>23 said that was a complete copy of the report?</p>	<p style="text-align: right;">Page 272</p> <p>1 report?</p> <p>2 A. Yes.</p> <p>3 Q. Do you know Professor Dimova?</p> <p>4 A. I may have met her, but, no, I don't</p> <p>5 really know her.</p> <p>6 Q. Have you worked with her on any</p> <p>7 projects or research?</p> <p>8 A. No.</p> <p>9 Q. Do you know her student Daniel</p> <p>10 Montiel?</p> <p>11 A. Yes, I know Daniel.</p> <p>12 Q. Have you worked with him on projects?</p> <p>13 I understand he may have interned or worked at PELA</p> <p>14 for some period of time?</p> <p>15 A. He was an intern for two months</p> <p>16 several years ago, but I did not work with him.</p> <p>17 Q. Other than these additional reference</p> <p>18 materials between the time of your first report and</p> <p>19 your second report, did you do any field</p> <p>20 investigation or sampling or testing or anything of</p> <p>21 that nature?</p> <p>22 A. Not in the field, no.</p> <p>23 Q. And I think you said before, but I'm</p>
<p style="text-align: right;">Page 271</p> <p>1 A. Yes, sir.</p> <p>2 Q. On page one, fourth paragraph down,</p> <p>3 you set out the purpose of this report is to</p> <p>4 specifically address Mr. Johnson and Mr. Brown's</p> <p>5 rebuttal reports, right?</p> <p>6 A. Yes.</p> <p>7 Q. Did you consider any other data or</p> <p>8 information other than looking at their reports to</p> <p>9 draft this rebuttal report?</p> <p>10 A. Yes, I did.</p> <p>11 Q. What was that?</p> <p>12 A. I looked at the 1988 US EPA guidance</p> <p>13 document to refresh my memory. I looked at a</p> <p>14 number of the references regarding rock</p> <p>15 description --</p> <p>16 Q. It looks like --</p> <p>17 A. -- sediment description, standards</p> <p>18 for describing and classifying soils.</p> <p>19 Q. Looks like on page 17 there's a couple</p> <p>20 of ASTM standards. Would that be two of the things</p> <p>21 you're talking about?</p> <p>22 A. Yes, sir.</p> <p>23 Q. Is that connected with Ms. Dimova's</p>	<p style="text-align: right;">Page 273</p> <p>1 not sure, but you did not make a visit to the site</p> <p>2 before writing the rebuttal report?</p> <p>3 A. That's correct.</p> <p>4 Q. Did you prepare the entire report</p> <p>5 yourself?</p> <p>6 A. Yes, with the assistance of a word</p> <p>7 processor. Excuse me. I think I also testified</p> <p>8 on Monday that Mr. Green provided some assistance</p> <p>9 but he did not prepare the report.</p> <p>10 Q. In this report unlike the first one</p> <p>11 that said opinions and conclusions, this one in</p> <p>12 Section 2.0 says Discussion is the heading, right?</p> <p>13 A. Yes, sir.</p> <p>14 Q. Does this Discussion section contain</p> <p>15 your opinions and conclusions?</p> <p>16 A. In addition to the ones we've</p> <p>17 already talked about, yes.</p> <p>18 Q. The first section deals with</p> <p>19 restoration, and let me direct your attention to</p> <p>20 the second paragraph that starts with "Regarding".</p> <p>21 A. Yes, sir.</p> <p>22 Q. Do you see that part?</p> <p>23 A. Yes, sir.</p>

<p style="text-align: right;">Page 274</p> <p>1 Q. At the end of that in the last 2 sentence you mention some scoping and screening 3 alternatives. Can you define for us what you mean 4 by that?</p> <p>5 A. Sure. The procedures that are 6 outlined for -- just for instance, CERCLA, or 7 RCRA, or addressing ADEM procedures, or any other 8 state procedures at this time for going from 9 defining the extent of the problem and leading up 10 to a remedy typically require that you scope out 11 potential remedial alternatives and then screen 12 them down to a narrower list of the ones that 13 might be applicable, and use scientific 14 information about the site to make a selection.</p> <p>15 Q. Has Drummond asked you to do any of 16 that?</p> <p>17 A. No.</p> <p>18 Q. This bullet point list you have of 19 nine items, where did that come from?</p> <p>20 A. This was out of the -- well, based 21 on my experience and also out of the EPA guidance 22 document.</p> <p>23 Q. Make sure I know which one that is on</p>	<p style="text-align: right;">Page 276</p> <p>1 entire refuse area has to be removed.</p> <p>2 Q. Let me ask it this way. Are there any 3 of these items that you believe that he hasn't 4 considered at all, these criterion as you call 5 them?</p> <p>6 A. I don't know what all he considered 7 in formulating his conclusion.</p> <p>8 Q. Well, he put it in writing and this is 9 your critique of what he put in writing, so that's 10 why I'm asking you.</p> <p>11 A. But I don't know what he actually 12 considered to get to his opinion about 13 restoration.</p> <p>14 Q. Did his written report fail to address 15 any of these criterion?</p> <p>16 MR. DAVIS: Object. The report would 17 speak for itself. You can answer if you can take a 18 memory test.</p> <p>19 A. I think I answered the counter 20 question of what he might have addressed. Now 21 you're asking me what he didn't address. I'm 22 sorry. I'm just --</p> <p>23 Q. Right. The way I read your report you</p>
<p style="text-align: right;">Page 275</p> <p>1 your reference list.</p> <p>2 A. Yes, sir.</p> <p>3 Q. Which one is that?</p> <p>4 A. On page 18 it's the October 1988 5 guidance document.</p> <p>6 Q. So as your reference list indicates 7 that's a document about CERCLA; is that right?</p> <p>8 A. Yes.</p> <p>9 Q. And so by including that list here 10 you're saying that would be applicable to 11 assessment at the Maxine site?</p> <p>12 A. The list, yes.</p> <p>13 Q. Have any of these nine bullet points 14 that you listed there been considered in the 15 opinions you've read by Mr. Johnson?</p> <p>16 MR. DAVIS: Object to the extent that 17 Johnson's document would speak for itself.</p> <p>18 A. He does make reference to human 19 health and the environment, compliance with 20 standards. Does have a -- Mr. Johnson does have 21 a recommendation for treatment, but I don't 22 believe there's substantiating information to use 23 what he says to move forward to conclude that the</p>	<p style="text-align: right;">Page 277</p> <p>1 listed nine criterion from a CERCLA document and 2 the implementation is that these should be 3 considered in connection with any remedy at Maxine; 4 is that correct?</p> <p>5 MR. DAVIS: Object. The report will 6 speak for itself --</p> <p>7 Q. Or it's there for no reason? What is 8 the reason why you put it there if it's not an 9 implication that it's relevant to --</p> <p>10 A. The reason -- the reason that I put 11 it there -- and I think I explained it was 12 reference to the risk assessment document also 13 and the ADEM document -- is there are steps and 14 criteria that a methodical approach that should 15 be taken and presented. I don't believe Mr. 16 Johnson has done that.</p> <p>17 Q. And I'm asking you in what respects 18 with specific reference to these criterion.</p> <p>19 MR. DAVIS: Same objection.</p> <p>20 A. I'm sorry. Would you ask the 21 question again? I believe I answered when you 22 said which ones did he address.</p> <p>23 MR. DAVIS: Just let him ask you a</p>

<p style="text-align: right;">Page 278</p> <p>1 question and then we'll provide the answer and I'll 2 provide the objection, asked and answered. The 3 documents speak for themselves. 4 Q. Have you listed all of the criterion 5 that you believe he has addressed? 6 A. That he has addressed? 7 Q. Yes. 8 A. No. I did not go through his 9 document and list what he has addressed. 10 Q. Let me ask you a question about the 11 formulating of this report. So the information 12 that's inside the boxes, you're quoting from 13 someone else's report -- 14 A. Yes. 15 Q. -- is that correct? But sometimes 16 there's information inside the box that appears 17 that it is not quoting from somebody else's report, 18 like at the top of page three, in that box there's 19 a sentence that's in italics and then there's a 20 sentence below it that's not. Can you explain 21 what's going on there? 22 A. The information in its entirety in 23 the box is from Mr. Johnson's report. And if we</p>	<p style="text-align: right;">Page 280</p> <p>1 PELA's report. 2 A. I'm not positive he was quoting it 3 but that's where it came from. Yes, sir. 4 Q. My concern was I did not believe that 5 that sentence was Mr. Johnson's words, and the fact 6 that it was inside the box made it appear that 7 maybe it was. But I think we cleared it up now. 8 A. Okay. Good. 9 Q. So you just took that block out of 10 this page of his report and put it inside the box? 11 A. Yes, sir. 12 Q. At the bottom of page three in the box 13 where you're referring to Johnson page A-2, do you 14 see that part? 15 A. Yes, sir. 16 Q. And so inside the box you have quoted 17 a portion of his report about removal being the 18 best option, right? 19 A. Yes. 20 Q. And after that box concludes you 21 wrote, "Refer to my comments on page 1, above". 22 A. Yes, sir. 23 Q. So that was your response to</p>
<p style="text-align: right;">Page 279</p> <p>1 could pull up his rebuttal report. 2 (Whereupon, Plaintiff's Exhibit Number 41 3 was marked for identification.) 4 Q. I'm handing you his rebuttal report 5 marked as Exhibit 41. Okay. So this is starting 6 right here where I'm pointing is what you've put 7 inside the box, right? 8 A. Yes, sir. 9 Q. Okay. And this is from Mr. Johnson's 10 rebuttal report but this particular part of it is 11 him quoting something that somebody else said; 12 those are not his words is why it makes it a little 13 confusing I think. 14 A. The information in the boxes 15 throughout my rebuttal report is specifically 16 from either Mr. Johnson or Mr. Brown's report. 17 And if there are italics, some of them may be 18 direct quotes from my report or others, or I 19 think Mr. Johnson did paraphrase things in some 20 instances. 21 Q. Right. So the information in the 22 first sentence inside that box comes from 23 Mr. Johnson's rebuttal report and he is quoting</p>	<p style="text-align: right;">Page 281</p> <p>1 everything inside the box? 2 A. Yes, sir. 3 Q. Now, page one is the introduction page 4 and it doesn't seem to address anything in the box. 5 A. Correct. It should have said page 6 two. 7 Q. So it should be page two? 8 A. Yes, sir. 9 Q. So you're just reincorporating 10 everything you said on page two. And in that box 11 that you quoted with Mr. Johnson's rationale, he 12 says that removal would be a, quote, "permanent 13 solution." Do you agree with that? 14 MR. DAVIS: Object to the form. 15 A. I don't think I got past the fact 16 that I don't agree with the remediation, the 17 method that he is approaching -- or recommending. 18 I don't have an opinion regarding that, no. 19 Q. You can't say yes or no about whether 20 if you removed all the waste that that would be a 21 permanent solution to the problems at the site? 22 MR. DAVIS: Object to the form. 23 A. No, I don't have an opinion about</p>

<p style="text-align: right;">Page 282</p> <p>1 that. Like I said, I don't think I got past the 2 fact that I strongly disagree with the total 3 removal. 4 Q. I got that part but I'm just asking if 5 it would be a permanent solution, and you say you 6 can't answer that? 7 A. No, I don't have an opinion about 8 that right now. 9 Q. Would removal of the waste material 10 reduce future maintenance and upkeep of the 11 property? 12 MR. DAVIS: Object to form. 13 Q. Maintenance and monitoring? Let me 14 ask you this way. Those are Mr. Johnson's words. 15 MR. DAVIS: Same objection. 16 A. I guess maintenance of what and 17 monitoring of what? 18 Q. Well, I believe from his opinion it 19 was evident that he meant maintenance and 20 monitoring of a treat-in-place system for the 21 pollution on the site coming off the GOB pile. 22 A. Sorry. A treat in place? 23 Q. Yes. Are you familiar with that</p>	<p style="text-align: right;">Page 284</p> <p>1 include certain things. And the first one is that 2 you should account for each contaminant migration 3 pathway. Do you agree with that? 4 A. Certainly. A restoration of any 5 site should account for pathways. 6 Q. Okay. The second thing is he says it 7 should be designed to minimize active controls and 8 the need for ongoing maintenance and monitoring. 9 Do you agree with that? 10 MR. DAVIS: Object to the form and 11 foundation. 12 A. Generically, yes. 13 Q. Do you believe that there is a way to 14 stabilize the mine waste on the site without 15 removing the trees on the site? 16 A. I don't have an opinion about 17 stabilization. 18 Q. Okay. In the next box that you quoted 19 on that page, you quote Mr. Johnson says steep 20 slopes and the GOB pile are susceptible to erosion 21 and sloughing. Do you agree with that or disagree? 22 MR. DAVIS: Object to the form. 23 A. I disagree based on my observations.</p>
<p style="text-align: right;">Page 283</p> <p>1 terminology? 2 A. Certainly. 3 Q. That's what he was referring to; that 4 it would -- removal would reduce the maintenance 5 and monitoring requirements in the future, and I'm 6 asking if you agree or disagree? 7 A. As opposed to a treat in place? 8 Q. Yes. 9 MR. DAVIS: Object to the form. 10 Foundation. 11 A. I guess it could, but I don't really 12 have an opinion because I don't understand the 13 specifics of the treat in place. 14 Q. Have you developed on your own any 15 kind of conceptual proposal for treatment in-place 16 scenarios on the Maxine site? 17 A. No, not since working with Alabama 18 By-Products in the early '80's when we worked 19 together. 20 Q. In the top of page four in the box 21 where you quoted Mr. Johnson's language, he says 22 that if you are going to engage in restoration of 23 the GOB pile in place that any such program should</p>	<p style="text-align: right;">Page 285</p> <p>1 There are steep slopes that are vegetated with 2 pine trees and covered with pine straw. There's 3 no indication that any rain events have washed 4 the pine straw away and exposed -- exposed the 5 refuse material where there is current 6 vegetation. 7 Q. Okay. At the bottom of the page you 8 refer to Figure A-2. Do you see that? 9 A. Yes, sir. 10 Q. Can you explain to me like I'm an 11 eight year old what your criticism means there with 12 regard to this figure, even though you may think it 13 should be younger than that, indulge me? 14 A. I'm older than eight years old and I 15 don't understand it either, what these numbers 16 relate to in the map in his report. 17 Q. You said the existing slope line does 18 not clearly correspond with the contours. 19 A. I'm assuming this black line is the 20 cross-section across this map. 21 Q. You're pointing to Figure A-1? 22 A. Yes. Sorry. 23 Q. Okay.</p>

<p style="text-align: right;">Page 286</p> <p>1 A. And on Figure A-2, that the two</p> <p>2 lines refer to -- two different colored lines</p> <p>3 refer to an existing slope and a regraded slope.</p> <p>4 And I did make a comparison or attempted to make</p> <p>5 a comparison of what I think are land surface</p> <p>6 contours on the map, although they're not</p> <p>7 labeled, as to where the steeper areas and the</p> <p>8 flat areas are in relation to the cross-section,</p> <p>9 and just was not a good reference between one</p> <p>10 document and the other.</p> <p>11 Q. Do you understand how he derived the</p> <p>12 existing slope that's shown in Figure A-2?</p> <p>13 A. I understand how one might, but I'm</p> <p>14 not sure how Mr. Johnson did.</p> <p>15 Q. Let me ask simply then: Do you</p> <p>16 believe that what he depicts as the existing slope</p> <p>17 is inaccurate?</p> <p>18 A. I don't know if it's accurate or</p> <p>19 not. There's no numbers on the contours if</p> <p>20 that's what they are on Figure --</p> <p>21 Q. Look at the copy that you have, if you</p> <p>22 don't mind. I think we marked -- this is my copy.</p> <p>23 It's got a few things written on it. Here it is.</p>	<p style="text-align: right;">Page 288</p> <p>1 and site control. And you say based on aerial</p> <p>2 photography that you think the areas are</p> <p>3 substantially reforested?</p> <p>4 A. Yes, sir.</p> <p>5 Q. Which photographs would that be based</p> <p>6 on?</p> <p>7 A. The recent aerial photography from</p> <p>8 Google Earth. Google Earth Pro, which I</p> <p>9 reference on page 18.</p> <p>10 Q. And how would you define substantially</p> <p>11 reforested?</p> <p>12 A. The majority of. The vast majority</p> <p>13 of.</p> <p>14 Q. What could you tell about ground cover</p> <p>15 and vegetative ground cover from an overhead Google</p> <p>16 photo?</p> <p>17 A. In looking at the photography</p> <p>18 available on Google Earth that covers sometime</p> <p>19 back into '90's to 2017, which you can look at</p> <p>20 historically through the program, I looked at the</p> <p>21 progression of revegetation, and based on the</p> <p>22 recent photography there are very limited areas</p> <p>23 that indicate unvegetated areas on top of the</p>
<p style="text-align: right;">Page 287</p> <p>1 A. Sorry.</p> <p>2 Q. I'm sorry. I took it from you.</p> <p>3 A. I wasn't trying to grab it out of</p> <p>4 your hand. Assuming these are land surface</p> <p>5 contours, they're not labeled as to what the</p> <p>6 elevation is.</p> <p>7 Q. On Figure A-1?</p> <p>8 A. Yes, sir.</p> <p>9 Q. Anything else? I'm just trying to</p> <p>10 have you explain it so that we can make sure</p> <p>11 Mr. Johnson can straighten himself out.</p> <p>12 MS. ANDREEN: Those are bigger pages</p> <p>13 if you need to pull it out.</p> <p>14 A. I can see there is no numbers on</p> <p>15 them.</p> <p>16 Q. Okay. Have you finished your</p> <p>17 explanation on that?</p> <p>18 A. I think so.</p> <p>19 Q. Okay. On page five of your report</p> <p>20 after the last box where you refer to page 31 of</p> <p>21 Mr. Brown's --</p> <p>22 A. Yes, sir.</p> <p>23 Q. -- opinion, this is about vegetation</p>	<p style="text-align: right;">Page 289</p> <p>1 refuse pile.</p> <p>2 Q. In your opinion, which would be better</p> <p>3 at stopping erosion: Ground cover vegetation or</p> <p>4 pine trees?</p> <p>5 A. Depends on the slope for one thing.</p> <p>6 Q. How about on a 45-degree slope?</p> <p>7 A. I really don't have an opinion.</p> <p>8 Lots of variables. Depends on the soil makeup.</p> <p>9 I don't have an opinion on that.</p> <p>10 Q. Mr. Johnson at some point cited some</p> <p>11 provisions from the Alabama Code about landfills</p> <p>12 and prescribed methods for vegetation in those</p> <p>13 areas. Do you recall reviewing that material?</p> <p>14 A. I don't recall, no.</p> <p>15 Q. Do you know if that would be</p> <p>16 applicable to the Maxine site in your -- do you</p> <p>17 have an opinion about that?</p> <p>18 A. No, I don't.</p> <p>19 Q. Just to be clear about this, in the</p> <p>20 bottom paragraph on that page you refer to upstream</p> <p>21 and downstream samples. I want to just make sure I</p> <p>22 understand what you're referring to there.</p> <p>23 I think it may be easiest to refer to</p>

<p style="text-align: right;">Page 290</p> <p>1 the sampling map. There's that one and there's one 2 other one before that that both shows the sampling 3 locations, whichever one you feel more comfortable 4 looking at. 5 A. It would be SW15 and SW1. 6 Q. And what Figure are you referencing? 7 A. I'm sorry. Figure 29 in Mr. Sisk's 8 Exhibit 8. Mr. Brown's report of October 2017. 9 Q. Thank you. In that same paragraph you 10 say that the chemical character of, quote, "surface 11 water downstream does not exhibit impact." What do 12 you mean by surface water? 13 A. The water in the Locust Fork is 14 surface water. 15 Q. You're referring to the water in the 16 river at that point? 17 A. Yes, that's what was sampled. 18 Q. I think we already talked about the 19 mixing zone that PELA established. 20 (Whereupon, a discussion was held off the 21 record.) 22 Q. Let me ask you a little bit narrower 23 question again about the volumetrics now that we</p>	<p style="text-align: right;">Page 292</p> <p>1 shift the timeframes just made assumptions to get 2 to that point. 3 And that would be the same on the -- 4 this graph Number 16, the differential between -- 5 the numeric differential between two points can 6 be anywhere on that graph up and down, year by 7 year, and use that information to back calculate 8 and apply the erosion rate or the application 9 rate. So again, I think it's speculative. 10 Q. Do you know if the literature -- if 11 there's literature out there that supports the use 12 of the methodology that aquilogic used to derive 13 these figures? 14 A. The ultimate volumetrics? 15 Q. Yes. 16 MR. DAVIS: Do you know? 17 A. No. No. 18 Q. So as aquilogic concedes they assumed 19 constant rates of erosion and GOB placement in 20 connection with these calculations. Are there any 21 other assumptions that you believe that they made? 22 MR. DAVIS: Object to the form. 23 A. Well, the area that was outlined in</p>
<p style="text-align: right;">Page 291</p> <p>1 see the full back and forth. And I understood your 2 testimony earlier about the difference in the 3 contour lines on the maps and the response was that 4 regardless of the display intervals the underlying 5 volumetric changes in Figures 14 and 15 that we 6 looked at is the same, so what is your response to 7 that; that the volumetrics are the same? 8 A. Mr. Brown saying the volumetrics are 9 the same? 10 Q. Yes. 11 A. At certain points in time and that 12 time was adjusted based on my comment. 13 Q. Well, first break it down. Is he 14 correct that the underlying volumetrics are the 15 same? The volumetric changes? I'm sorry. 16 A. I disagree with that statement. 17 Although we talked about, very early on, that the 18 net loss volume although comparing the basis of 19 two different maps could give you variability, 20 the net loss is a -- could be numerically derived 21 to show the difference in elevation between the 22 two maps. And the use of that number may have 23 been where he started from, and then in order to</p>	<p style="text-align: right;">Page 293</p> <p>1 red was based on interpretation or assumptions 2 also. 3 Q. So that's -- 4 A. I don't agree with. Not that I can 5 determine, no, sir. 6 Q. And so aquilogic compared pre-mining 7 information to the 1965 information and concluded 8 that the net addition of material was 3.35 million 9 cubic yards. And that's quoted on page nine of 10 your report. 11 Do you believe that figure is 12 accurate? 13 MR. DAVIS: Object to the form. 14 A. I'm sorry. Where are you on the 15 page? 16 Q. It's in the box on the top of page 17 nine. 18 A. The top part? 19 Q. It's in the sentence that starts 20 "Regardless". So I'm trying to break it down into 21 some smaller component parts. And this is, the 22 first step is they're saying the net volume gain 23 from mining started in 1965 and the material is</p>

<p style="text-align: right;">Page 294</p> <p>1 approximately 3.35 million cubic yards. And I'm 2 asking if you dispute that figure. 3 A. Yeah, I think it's based on the 4 assumptions. I do dispute it. 5 Q. For the reasons you've already 6 articulated? 7 A. Yes, sir. 8 Q. On page 10 near the bottom of the 9 page, the last paragraph, the previous question was 10 about the net volume gain. This sentence was 11 during that same time period, '56 to 1965, they 12 calculated that approximately 4.18 million cubic 13 yards was deposited on the site. Do you dispute 14 that figure? 15 A. It was hiding. 16 Q. For the record, which figure are you 17 looking at there? 18 A. I'm looking at Figure 16 and the -- 19 I'm looking at the 2017 report though. 20 Q. Yeah, I think the figures in this box 21 on page 10 would be from the 2018 report. 22 A. Again, whether we look at the 23 revised or the original, I think the numbers are</p>	<p style="text-align: right;">Page 296</p> <p>1 Mr. Johnson's report where he's estimating the 2 amount of material that would have to be moved 3 under various remediation scenarios. 4 Have you made any independent 5 calculations, alternative calculations, to check 6 his numbers? 7 MR. DAVIS: Object to the form and 8 foundation. 9 A. No, I haven't. And his numbers are 10 based on Mr. Brown's is my understanding with one 11 exception. 12 Q. Specifically in that top box on page 13 12 he's saying that he estimates that approximately 14 half of the remaining material on the site would 15 have to be removed to uncover Tributary 1. And I'm 16 just asking if you made any independent analysis 17 about that? 18 A. No, I haven't. 19 Q. Turn it over to page 14 where you are 20 addressing Dr. Dimova's work. 21 A. Yes, sir. 22 Q. Let me ask you as a general principle, 23 is analysis of grain size and water content a valid</p>
<p style="text-align: right;">Page 295</p> <p>1 based on assumptions. 2 Q. Well, they do say approximately, so, I 3 mean, we understand they're not trying to be 4 precise. 5 MR. DAVIS: Object to form. I'm not 6 sure that was a question. 7 A. I was going to offer the assumptions 8 that we talked about earlier. 9 Q. The same assumptions you listed 10 earlier? 11 A. Yes, sir. 12 Q. Would that same response apply to the 13 last figure, the 7.58 million cubic yards, which 14 they have calculated as the approximate total 15 amount of material that was placed on a GOB pile? 16 A. Yes. 17 Q. So to summarize your testimony, you 18 question those, or you don't agree with those based 19 on assumptions they made, but you haven't made any 20 independent alternative calculations? 21 A. I have not made any calculations. 22 Q. Let me ask you a different question. 23 On page 11 and 12 you quoted from the section of</p>	<p style="text-align: right;">Page 297</p> <p>1 way to distinguish native from non-native material 2 on the river bottom? 3 MR. DAVIS: Object to the form. 4 A. Grain size analysis and water 5 content is a component of describing earth 6 materials. That's specifically what's referred 7 to as GOB or sediments. 8 Q. Is grain size and water content 9 analysis a valid way to determine if the material 10 is gravel as opposed to clay? 11 A. Yes. 12 Q. On page 15 of your report you cite 13 some aspects or components that you say are absent 14 from Dr. Dimova's report. 15 A. Yes. 16 Q. What's the source of that list of 17 items? 18 A. Many years of experience. 19 Q. You call that standard accepted 20 industry procedures and protocols? 21 A. Yes, sir. 22 Q. And that basically amounts to, you 23 just said, your experience?</p>

<p style="text-align: right;">Page 298</p> <p>1 A. I wasn't finished with my answer.</p> <p>2 Q. Okay.</p> <p>3 MR. DAVIS: He doesn't want to hear</p> <p>4 your answer.</p> <p>5 Q. You stopped talking. That's why I</p> <p>6 assumed you were finished.</p> <p>7 A. I did? I'm sorry. I didn't think I</p> <p>8 stopped.</p> <p>9 There are many protocols that are</p> <p>10 used for data gathering and data interpretation</p> <p>11 and data reporting and standard formats. They're</p> <p>12 outlined in ADEM documents, some of the ADEM</p> <p>13 documents we talked about before, EPA documents,</p> <p>14 textbooks that discuss how to assess sites and</p> <p>15 contamination and report them. These are</p> <p>16 standard procedures that are used by the oil and</p> <p>17 gas industry for looking at what's underneath our</p> <p>18 feet, the coal industry, any mineral industry,</p> <p>19 just standard procedures that address the detail</p> <p>20 that's needed to describe what you do in the</p> <p>21 field, describe how you interpret the</p> <p>22 information, and describe sufficiently how you</p> <p>23 report the information.</p>	<p style="text-align: right;">Page 300</p> <p>1 A. Oh, same thing. It's even more</p> <p>2 detailed than Mr. Maher's document.</p> <p>3 MR. DAVIS: During the pause here, I</p> <p>4 sure don't want to slow anything down any more but</p> <p>5 can you give me an idea about how much you've got</p> <p>6 left because I may need to make a call.</p> <p>7 MR. BROCK: Not much.</p> <p>8 MR. DAVIS: More than ten minutes?</p> <p>9 I'm not trying to press you.</p> <p>10 MR. BROCK: Yeah, that's pretty</p> <p>11 specific. Ten to 15, 15 to 20. Not more than</p> <p>12 that.</p> <p>13 MR. DAVIS: Let me make a call.</p> <p>14 (Whereupon, a break was taken.)</p> <p>15 Q. (BY MR. BROCK) One aspect of your</p> <p>16 report addressing Dimova is confusing to me. I</p> <p>17 want to see if we can figure it out.</p> <p>18 So on the bottom of page 15 your</p> <p>19 report says that the sample location coordinates</p> <p>20 indicate that the sites were on the left bank of</p> <p>21 the river facing downstream. How did you determine</p> <p>22 that?</p> <p>23 A. Based on the coordinates that were</p>
<p style="text-align: right;">Page 299</p> <p>1 Q. Let me ask a more narrow question.</p> <p>2 This list of eight things that you listed here, did</p> <p>3 those come out of your mind and you typed them down</p> <p>4 or did they come from a secondary source?</p> <p>5 A. Both.</p> <p>6 Q. Okay. What was the secondary source?</p> <p>7 A. The guidance documents that we were</p> <p>8 referring to earlier from ADEM. Also the</p> <p>9 guidance sample examination manual, Swanson,</p> <p>10 which is one of my references; Maher, which is</p> <p>11 one of my references; Compton, Field Geology</p> <p>12 Manual.</p> <p>13 Q. So, for example, looking at page 18 on</p> <p>14 the references you said Maher, and this indicates</p> <p>15 that this is a document about logging drill</p> <p>16 cuttings in Oklahoma; is that right?</p> <p>17 A. It is -- it is a reference document</p> <p>18 that is utilized by the consulting industry and</p> <p>19 the oil and gas industry, and it describes how</p> <p>20 you would retrieve and describe samples of land</p> <p>21 surface and the subsurface.</p> <p>22 Q. And the Swanson material, what</p> <p>23 relevance does that have to core sampling?</p>	<p style="text-align: right;">Page 301</p> <p>1 in her report and plotting them on Google Earth,</p> <p>2 Maps, whatever.</p> <p>3 Q. I'm just going to show you -- I'm</p> <p>4 going to mark it Exhibit 42 to this deposition.</p> <p>5 That was a deposition -- an exhibit to Dr. Dimova's</p> <p>6 deposition. And my understanding, or I think she</p> <p>7 testified, is this is a plot of the coordinates and</p> <p>8 it shows the sample points on the opposite side of</p> <p>9 the river from what is stated in your report.</p> <p>10 MR. DAVIS: Make sure you read the</p> <p>11 whole sentence of what you said in your report.</p> <p>12 (Whereupon, Plaintiff's Exhibit Number 42</p> <p>13 was marked for identification.)</p> <p>14 A. That's true. It should be right</p> <p>15 bank.</p> <p>16 Q. Your report should say right bank?</p> <p>17 A. That's correct.</p> <p>18 Q. And all the analysis that follows</p> <p>19 about morphological conditions along the banks and</p> <p>20 everything, are you talking about the right bank of</p> <p>21 the river facing downstream or the left bank?</p> <p>22 A. I'm talking about where the samples</p> <p>23 were.</p>

<p style="text-align: right;">Page 302</p> <p>1 Q. How do you know -- how are you certain</p> <p>2 about that, that you --</p> <p>3 A. Because --</p> <p>4 Q. -- are referring to the right bank</p> <p>5 instead of the left bank?</p> <p>6 A. Because I was referring to where she</p> <p>7 took her samples. I was about to say, what I</p> <p>8 wrote for the rest of it is not relevant to what</p> <p>9 bank I referred to.</p> <p>10 Q. Okay. So all of the information on</p> <p>11 page 16 you're saying would be equally applicable</p> <p>12 whether it was the right or the left bank?</p> <p>13 A. That's correct.</p> <p>14 Q. Have you been to those sample sites?</p> <p>15 A. No, I have not.</p> <p>16 Q. You indicate on page 16 you reviewed</p> <p>17 some aerial photography. Is that what you</p> <p>18 reviewed?</p> <p>19 A. Yes, sir. I have been at BW2, the</p> <p>20 sample site close to the --</p> <p>21 Q. To the dam?</p> <p>22 A. Yes.</p> <p>23 Q. In the paragraph in the middle of that</p>	<p style="text-align: right;">Page 304</p> <p>1 A. Her report, I believe, said they</p> <p>2 were approximately 2.3 feet or shorter.</p> <p>3 Q. So would this 20 acres of developed</p> <p>4 land near a sampling spot -- I'm trying to</p> <p>5 understand, how would that affect a core sample</p> <p>6 that went down three feet below the river bottom?</p> <p>7 A. The facility has been there for a</p> <p>8 number of years based on the aerial photography,</p> <p>9 so that sediments being transported downstream</p> <p>10 over a number of years could be deposited near</p> <p>11 shore and comprise part of the thickness or all</p> <p>12 of the thickness of that sample.</p> <p>13 Q. You haven't reviewed Dr. Dimova's</p> <p>14 deposition, have you?</p> <p>15 A. No, I haven't.</p> <p>16 Q. You described already the potential</p> <p>17 impact or relevance of the development. What would</p> <p>18 the potential impact on a core sample be from an</p> <p>19 inflow feature near the sampling site?</p> <p>20 A. Again, it could be contributing</p> <p>21 sediments that would drop out depending on the</p> <p>22 size, their grain size, close to BW5 or at BW5</p> <p>23 and be a component of the sample.</p>
<p style="text-align: right;">Page 303</p> <p>1 page you discuss some onshore commercial</p> <p>2 development and activity in the proximity of the</p> <p>3 sampling site BW5, right?</p> <p>4 A. Yes, sir.</p> <p>5 Q. Can you just explain how that</p> <p>6 development or onshore activity would impact a core</p> <p>7 sample?</p> <p>8 A. The facility I'm referring to is a</p> <p>9 large land disturbance. Vegetation was removed.</p> <p>10 It has or has had waterfront activities, a barge</p> <p>11 loading facility, and it is upstream of sample</p> <p>12 BW5, and materials would travel downstream from</p> <p>13 that waterfront to BW5 potentially, as would</p> <p>14 sediments that are coming out of the tributary or</p> <p>15 slough or whatever we want to call it that is</p> <p>16 close to BW5.</p> <p>17 Q. Did you look at the photos of the core</p> <p>18 samples?</p> <p>19 A. No, I didn't know there were any</p> <p>20 photos of the core samples.</p> <p>21 Q. Do you know the depth of the core</p> <p>22 samples in terms of how far below the river bottom</p> <p>23 the samples extended?</p>	<p style="text-align: right;">Page 305</p> <p>1 Q. What about at BW2?</p> <p>2 A. They might make it all the way</p> <p>3 there.</p> <p>4 Q. Oh, no. I'm just saying, is there any</p> <p>5 inflow feature into the river at that point that</p> <p>6 might affect the bottom sediments?</p> <p>7 MR. DAVIS: BW2? I just didn't hear</p> <p>8 you.</p> <p>9 A. I'm not really sure precisely where</p> <p>10 that sample location is relative to the dam.</p> <p>11 Q. I thought you said you'd been there a</p> <p>12 few seconds ago.</p> <p>13 A. Well, I plotted --</p> <p>14 Q. Go ahead.</p> <p>15 A. I've been on the dam and seen the --</p> <p>16 the area -- the proximity where she sampled.</p> <p>17 Q. What does the term "gravel" mean in</p> <p>18 term of sizing or classifying rock material?</p> <p>19 A. It's -- without looking at the</p> <p>20 Wentworth scale or the grain size distribution,</p> <p>21 it has a specific millimeter size associated with</p> <p>22 it.</p> <p>23 Q. Okay. With regard to BW5 you said</p>

<p style="text-align: right;">Page 306</p> <p>1 that the aerial photography showed lateral bar and 2 bank deposits. What does that mean? 3 A. Lateral deposits are deposits that 4 are parallel to the configuration of the stream, 5 like a sand bar. The historical photography 6 showed in the vicinity of the sampling that these 7 deposits are visible. It could depend on the 8 river level at the time of the aerial photography 9 but they do indicate that there's sediment 10 deposition close to the bank. 11 Q. And what relationship would that have 12 or what relevance would that have to whether a core 13 sample was appropriate? 14 A. It would depend -- 15 Q. Go ahead. 16 A. It would depend on where the sample 17 was taken, whether it was taken actually in the 18 bar or at a deeper location where the sediments 19 could vary. They could have a different grain 20 size or a different composition. 21 Q. So you're saying if the sample was 22 taken in the bar then it might not necessarily be 23 representative of typical river conditions in that</p>	<p style="text-align: right;">Page 308</p> <p>1 A. Not at this time. 2 Q. Looks like in your reference list you 3 refer to the ASTM Standard 2487 and 2488? 4 A. Yes, sir. 5 Q. Are you familiar with the NIST 6 standards? 7 A. I know what NIST means. 8 Q. What is it? 9 A. National Institute of Scientific 10 Testing, I believe is what it's called. 11 Q. Are there one set of standards ASTM 12 versus NIST that would be preferable for this 13 application or the analysis that Dr. Dimova 14 performed? 15 A. The ASTM standards are standards 16 that are typically used in describing subsurface 17 materials or surface materials. 18 Q. Have either of those standards been 19 superseded or appealed to your knowledge? 20 A. Well, they have a date of 2000 so 21 it's likely that they have been revised over 22 time. 23 Q. I'm not going to go through each one</p>
<p style="text-align: right;">Page 307</p> <p>1 area? 2 A. No. 3 Q. Is that the point? 4 A. No, I'm not saying that. I'm saying 5 that one sample at a location particularly close 6 to the riverbank isn't representative of the 7 sediment of the Locust Fork, the natural sediment 8 of the Locust Fork. 9 Q. What if the core sample is deep enough 10 to give you like a hundred-year picture of the 11 river bottom, it still wouldn't be an adequate 12 representation of the river bottom in that area? 13 A. It would be a representation of the 14 sedimentation that occurred at that core 15 location, not necessarily a profile across the 16 river that you would look at all of them. That 17 one sample can't be representative of Locust 18 Fork. 19 Q. How many would you need to establish 20 what was representative of that area of Locust 21 Fork? 22 A. I haven't made that determination. 23 Q. Do you have an estimation?</p>	<p style="text-align: right;">Page 309</p> <p>1 of them, but in the reference list there were 2 several that we checked and couldn't find online 3 publically available. If we were to request that 4 you provide it to Richard so we could get it, would 5 you agree to do that? 6 A. Sure. 7 Q. Okay. I think that's all. 8 MR. DAVIS: All right. Thank you. 9 (Whereupon, the preceding deposition was 10 concluded at 5:36 p.m.) 11 12 13 14 15 16 17 18 19 20 21 22 23</p>

Page 310

1 ERRATA SHEET

2

3 PLEASE LIST ANY CORRECTIONS BELOW

4 PLEASE DO NOT WRITE ON THE

5 TRANSCRIPT

6 PAGE NO. LINE NO. CORRECTION

7

8 1. _____

9 2. _____

10 3. _____

11 4. _____

12 5. _____

13 6. _____

14 7. _____

15 8. _____

16 9. _____

17 10. _____

18 11. _____

19 12. _____

20 13. _____

21 14. _____

22 15. _____

23 16. _____

Page 311

1 DEPONENT'S CERTIFICATE

2

3

4 I, LOIS GEORGE, the witness herein,

5 have read the transcript of my testimony and the

6 same is true and correct, to the best of my

7 knowledge. Any corrections and/or additions, if

8 any, are listed separately.

9

10

11

12 _____

13 LOIS GEORGE

14

15

16 NOTARY PUBLIC:

17 COMMISSION EXPIRES:

18

19

20

21 Dated: _____

22

23

Page 312

1 REPORTER'S CERTIFICATE

2 STATE OF ALABAMA)

3 JEFFERSON COUNTY)

4 I hereby certify that the above and foregoing

5 deposition was taken down by me in stenotype, and

6 the questions and answers thereto were transcribed

7 by means of computer-aided transcription, and that

8 the foregoing represents a true and correct

9 transcript of the testimony given by said witness

10 upon said hearing, to the best of my ability and

11 understanding.

12 I further certify that I am neither of

13 counsel, nor of kin to the parties to the action,

14 nor am I in anywise interested in the result of

15 said cause.

16

17 /S/Kimberly B. Dowdy

18 Kimberly B. Dowdy, CCR, RPR

19 Alabama CCR #62

20 My Commission expires:

21 March 16, 2020

22

23

<u>WORD INDEX</u>	1993 268:7	365 239:5 37th 217:12	283:18
< 1 >	< 2 >	< 4 >	< 9 >
1 220:11, 14 221:18 227:22 236:6 244:12, 14 252:21 280:21 296:15 310:8	2 214:16 310:9 2.0 273:12 2.3 304:2 2:16-CV-01443-AK K 214:5 2:23 219:8 20 300:11 304:3 2000 308:20 2016 247:13 2017 237:22 240:17 244:16 247:13 288:19 290:8 294:19 2018 214:17 215:8 219:8 240:17 270:22 294:21 2020 312:20 2031 214:22 20-foot 230:8 214-312 214:16 219 218:4 24,000 234:21 2487 308:3 2488 308:3 25 270:22 27 214:17 27th 215:7 219:8 282 217:7 2829 217:7 29 290:7	4 220:11, 15 240:8 241:1 244:9 270:21 310:11 4.18 294:12 40 229:18, 22 236:5 40229 218:8 41 279:2, 5 41279 218:8 42 301:4, 12 42301 218:11 45-degree 289:6	9 222:4 228:9 310:16 90's 288:19 92 235:14 93,000 235:14
1.9 257:9 10 222:4 294:8, 21 310:17 100 215:6 217:18 219:6 10-foot 230:9, 9 11 222:4 295:23 310:18 12 222:4 224:8 295:23 296:13 310:19 13 268:6 310:20 136p 268:14 14 229:13, 14 230:1 231:10, 15 270:6 291:5 296:19 310:21 15 229:14 230:14, 17, 18 231:10, 15 291:5 297:12 300:11, 11, 18 310:22 16 292:4 294:18 302:11, 16 310:23 312:20 17 271:19 18 275:4 288:9 299:13 1938 234:17, 18 1965 229:12 293:7, 23 294:11 1971 229:11 234:20 1975 228:9, 14 1980's 247:2, 4 263:16 265:11 1984 248:13 258:2 259:14 260:10, 14 1985 253:9 1987 228:9, 14 1988 271:12 275:4	< 3 > 3 240:5, 9 310:10 3.35 293:8 294:1 3:33 261:13 31 287:20 310 218:11 311 218:11 312 218:11 32,000 235:14 35209 217:19 35216 214:23 35222-206 217:13 35233 217:8 36 256:18 258:9 260:6, 7	< 5 > 5 244:6 258:2 310:12 5:36 309:10 501 257:9 56 294:11	A-1 285:21 287:7 A-2 280:13 285:8 286:1, 12 ABC 254:14 258:11 ability 312:10 able 221:2 222:19 243:18, 21 244:3 absent 297:13 absolutely 239:12 accepted 297:19 accepts 240:16 account 235:9 241:8 243:8 284:2, 5 accuracy 236:17 237:2, 13 accurate 230:12 238:2 286:18 293:12 acreage 237:13 acres 304:3 Act 259:6, 15, 16 260:11, 15 acting 219:3 Action 261:20 264:10, 18 312:13 actions 253:3, 4 254:20 active 284:7 activities 253:5 254:2 255:6 303:10 activity 303:2, 6 actual 238:9 264:4 addition 226:18 239:18 273:16 293:8

<p>additional 222:8 226:20 262:16, 21 272:17</p> <p>additions 311:7</p> <p>address 246:3 254:21 255:9, 18 257:18 271:4 276:14, 21 277:22 281:4 298:19</p> <p>addressed 232:19, 20 276:20 278:5, 6, 9</p> <p>addresses 232:22</p> <p>addressing 274:7 296:20 300:16</p> <p>ADEM 266:21 267:14 274:7 277:13 298:12, 12 299:8</p> <p>adequate 307:11</p> <p>adjacent 246:14</p> <p>adjusted 291:12</p> <p>administrative 253:12 267:14</p> <p>adverse 251:21</p> <p>Aerial 218:11 221:20 222:22 223:1, 12 226:10 227:20, 23 248:18 288:1, 7 302:17 304:8 306:1, 8</p> <p>affect 249:11 304:5 305:6</p> <p>age 237:4</p> <p>agency 255:21</p> <p>ages 236:1 237:9</p> <p>ago 253:21 272:16 305:12</p> <p>agree 225:18 281:13, 16 283:6 284:3, 9, 21 293:4 295:18 309:5</p> <p>AGREED 215:3, 10 216:4, 12</p> <p>agreement 267:22</p> <p>ahead 220:12 235:19 241:14 253:22 260:2 261:4 305:14 306:15</p>	<p>ALABAMA 214:2, 23 215:7 217:8, 13, 19 219:3, 4, 7 227:21 238:22 239:17 265:8 268:7 283:17 289:11 312:2, 18</p> <p>allow 238:15</p> <p>allows 223:11</p> <p>altered 244:19 245:8</p> <p>alternative 295:20 296:5</p> <p>alternatives 274:3, 11</p> <p>Amec 242:4</p> <p>amount 235:7 242:20 295:15 296:2</p> <p>amounts 297:22</p> <p>analysis 234:5 236:8 241:2 243:8 257:6 296:16, 23 297:4, 9 301:18 308:13</p> <p>Analyst 236:20</p> <p>Andreen 217:6 287:12</p> <p>answer 223:17 238:18 246:4 249:19 251:13 254:18 261:4 264:23 266:2, 3, 5, 8 276:17 278:1 282:6 298:1, 4</p> <p>answered 231:22 232:3, 3 246:10 253:16 257:21 266:1 276:19 277:21 278:2</p> <p>answering 231:12 244:18</p> <p>answers 312:6</p> <p>Anthony 220:23 221:6 236:6</p> <p>anywise 312:14</p> <p>apologize 219:22</p> <p>appealed 308:19</p> <p>appear 280:6</p>	<p>APPEARING 217:3, 15</p> <p>appears 278:16</p> <p>appendices 220:19 221:12</p> <p>applicable 224:6 262:8 263:7, 8 274:13 275:10 289:16 302:11</p> <p>application 224:20 236:17 237:1, 6 260:9 263:5 292:8 308:13</p> <p>apply 239:4 292:8 295:12</p> <p>approach 277:14</p> <p>approaches 267:3</p> <p>approaching 281:17</p> <p>appropriate 306:13</p> <p>approximate 295:14</p> <p>approximately 227:16 294:1, 12 295:2 296:13 304:2</p> <p>aquilogic 236:11 292:12, 18 293:6</p> <p>area 224:11, 23 225:17 226:2 227:4 228:12, 22 229:2, 6, 10 230:21, 22 231:19 238:20 239:5, 13 247:6, 22 248:20 252:3 253:1, 6 254:10, 11 256:23 257:3 263:4, 18, 23 276:1 292:23 305:16 307:1, 12, 20</p> <p>areas 225:5 226:9, 9, 13, 18, 21 227:4 232:16 237:18 238:22 249:2 263:9 286:7, 8 288:2, 22, 23 289:13</p> <p>arrive 242:16</p> <p>arrows 227:2 232:14</p> <p>articulated 294:6</p>	<p>asked 219:22 231:14 237:23 254:19 259:2 263:13 274:15 278:2</p> <p>asking 229:8 255:1 257:20 260:13 276:10, 21 277:17 282:4 283:6 294:2 296:16</p> <p>ASMC 258:12, 21, 22 259:13 260:5</p> <p>aspect 300:15</p> <p>aspects 297:13</p> <p>assertions 240:6</p> <p>assess 298:14</p> <p>assessment 246:12 262:17 267:2 275:11 277:12</p> <p>assign 216:7</p> <p>assigned 226:10</p> <p>assigning 226:7</p> <p>assistance 273:6, 8</p> <p>associated 226:22 305:21</p> <p>assumed 292:18 298:6</p> <p>assuming 285:19 287:4</p> <p>assumption 235:12 236:3 239:6 243:23 244:2</p> <p>assumptions 235:6 244:1 292:1, 21 293:1 294:4 295:1, 7, 9, 19</p> <p>ASTM 271:20 308:3, 11, 15</p> <p>attached 221:11</p> <p>attachments 220:18</p> <p>attempt 237:21</p> <p>attempted 286:4</p> <p>attention 273:19</p> <p>Attorney 217:10</p> <p>available 238:12, 20 267:23 268:1, 3, 9 288:18 309:3</p> <p>Avenue 217:7</p>
---	--	--	--

aware 238:21	278:5 280:4	Brock 217:5 218:4	call 276:4 297:19
< B >	282:18 284:13	219:17 253:19	300:6, 13 303:15
back 219:18 236:2	286:16 292:21	300:7, 10, 15	called 233:15
239:8 261:14	293:11 304:1	Brookwood 215:6	308:10
288:19 291:1	308:10	217:18 219:6	calling 227:5
292:7	believed 254:14	Brown 222:4, 17	calls 254:10
background 269:23	bend 226:7	230:1 231:19	260:22 264:21
270:3	best 239:9 262:20	236:2, 6 238:4	captured 256:5
bank 232:10	280:18 311:6	241:1, 3 242:15	CASE 214:5
245:15 300:20	312:10	245:4 246:1	253:14 262:8
301:15, 16, 20, 21	better 289:2	250:18 291:8	267:22
302:4, 5, 9, 12	bigger 287:12	Brownfield 267:15	Cassidy 269:7
306:2, 10	binoculars 223:11	Brown's 218:8	cause 219:9 312:15
banks 301:19	Birmingham 215:7	220:23 221:7	CCR 312:18, 18
bar 306:1, 5, 18, 22	217:8, 13, 19 219:7	229:19 230:17	CENTER 217:4
barge 303:10	bit 227:4 234:15	232:17 235:4	CERCLA 274:6
Barry 217:5	290:22	237:6 240:6, 11, 12,	275:7 277:1
bars 245:14	BLACK 214:7	19 244:11, 16	certain 230:6
based 229:10, 11	217:11 285:19	252:12 271:4	253:3 258:18
233:22 235:11	block 280:9	279:16 287:21	263:4 266:17, 17
239:21 243:9, 23	blues 228:17	290:8 296:10	284:1 291:11
244:2 248:7	bold 233:17, 22	bullet 274:18	302:1
249:21 250:16	234:5	275:13	Certainly 223:3
251:5, 6, 19 252:22	book 269:8 270:14	BW1 218:11	237:12 259:18
254:12 263:15	bottom 225:16	BW2 218:11	264:23 283:2
264:6, 23 274:20	244:6 245:11, 13,	302:19 305:1, 7	284:4
284:23 288:1, 5, 21	17, 17 246:6, 13	BW3 218:11	CERTIFICATE
291:12 293:1	247:11, 15, 21, 23	BW4 218:11	218:11, 11 311:1
294:3 295:1, 18	253:9 280:12	BW5 218:11 303:3,	312:1
296:10 300:23	285:7 289:20	12, 13, 16 304:22,	certify 219:3
304:8	294:8 297:2	22 305:23	312:4, 12
basically 297:22	300:18 303:22	By-Products	change 229:9
basin 269:13 270:5	304:6 305:6	227:21 238:22	237:12 245:10, 11,
basing 228:8	307:11, 12	239:17 265:8	12, 13, 18 246:7
basis 227:19 232:1	boundary 227:14	283:18	changed 230:4
248:16, 17 291:18	box 278:16, 18, 23	< C >	245:9 246:20
bedrock 249:4	279:7, 22 280:6, 10,	calculate 236:2	247:3, 6
beginning 219:8	12, 16, 20 281:1, 4,	292:7	changes 229:16
BEHALF 217:3, 15	10 283:20 284:18	calculated 294:12	230:14 231:13
believe 221:9	287:20 293:16	295:14	235:5, 21 291:5, 15
222:17 223:15, 19	294:20 296:12	calculation 237:17	channel 250:2
225:20 231:6	boxes 278:12	238:3, 16	character 242:22
235:13 238:11	279:14	calculations 234:11	290:10
241:3 247:12	break 233:22	235:4 239:8, 10	characteristics
248:2 249:13	248:10 261:12, 13	240:2, 7 242:3, 7,	244:23 245:5, 7, 8,
258:17 262:15	291:13 293:20	17, 19 243:7	12, 19 246:8
264:8 269:19, 20	300:14	292:20 295:20, 21	249:11
270:9 275:22	bring 220:5	296:5, 5	characterization
276:3 277:15, 21			241:23 242:20, 21

<p>check 296:5 checked 309:2 chemical 290:10 chemicals 241:21 chemistry 243:5, 17, 20 260:16 263:17 264:1 265:4 Christina 217:6 chronological 254:1 circle 224:15 226:19 circumstances 265:19 cite 223:2 297:12 cited 289:10 cites 236:20 citing 269:21 Civil 219:5 clarified 233:3, 11 classifying 271:18 305:18 clay 297:10 Clean 259:6, 15, 16 260:10, 15 cleaner 255:12 clear 233:8 238:13 289:19 cleared 222:10 280:7 clearly 285:18 clerk 217:21, 22 climatological 239:3 265:2 266:20 close 250:1 270:20 302:20 303:16 304:22 306:10 307:5 closest 225:1 coal 268:7 269:7, 13 270:5 298:18 Code 267:15 289:11 collective 224:3 collectively 222:14 224:3 color 228:15 colored 286:2 colors 228:16 combination 233:19</p>	<p>come 234:4 238:10 246:19 267:19 274:19 299:3, 4 comes 279:22 comfortable 290:3 coming 219:18 260:17 265:5 282:21 303:14 comment 222:16 224:4 231:2 291:12 comments 230:3 280:21 commercial 303:1 Commission 253:9 311:17 312:18 Commissioner 215:6 216:14 219:3 compaction 239:4 COMPANY 214:10 comparable 241:11 266:18 compared 293:6 comparing 229:10 234:16, 21 236:13, 14 248:5 256:22 291:18 comparison 235:3 286:4, 5 complete 220:17, 20 221:6 270:23 completed 247:12 252:15 253:5 254:3, 20, 20 255:7, 9, 21 258:11 263:1 265:8 compliance 215:14 275:19 component 237:8 293:21 297:5 304:23 components 297:13 composition 306:20 comprehensive 226:6 comprise 304:11 Compton 299:11</p>	<p>computations 231:20 235:12 computer 223:5 computer-aided 312:7 concedes 292:18 conceive 263:7, 11 concentration 241:21 243:4 conceptual 262:11 283:15 concern 280:4 concert 267:1 conclude 228:10 253:7 275:23 concluded 260:1, 3 293:7 309:10 concludes 280:20 conclusion 234:7 240:5 244:5, 10 260:22 262:20 276:7 conclusions 240:11, 14 273:11, 15 condition 267:13 conditions 239:3 241:18 243:10 247:3, 5 251:3 265:2 266:20 301:19 306:23 conductance 252:16 configuration 246:20 247:11 306:4 confined 252:19 confirm 220:13 221:9 256:23 confusing 279:13 300:16 connected 271:23 connection 240:1 252:18 259:6, 12 266:22 267:7, 16 277:3 292:20 consider 241:1 271:7 consideration 238:1 241:16</p>	<p>considered 251:11 259:21 275:14 276:4, 6, 12 277:3 considering 242:22 consistent 244:9 264:7 constant 292:19 consultants 242:5 consulting 299:18 contain 273:14 contained 228:4 contaminant 284:2 contamination 298:15 content 296:23 297:5, 8 Continued 216:2 contour 230:4, 5, 7, 8, 10, 15 234:16 237:5 291:3 contours 230:9 285:18 286:6, 19 287:5 contributing 304:20 control 288:1 controls 284:7 coordinates 249:22 300:19, 23 301:7 Copeland 270:7 copies 268:1 269:3, 5 270:10 copy 220:17, 21, 23 221:6 268:4, 11, 12 269:10, 14, 18, 20 270:8, 10, 14, 23 286:21, 22 core 299:23 303:6, 17, 20, 21 304:5, 18 306:12 307:9, 14 Correct 224:1 225:3, 4, 18 226:22 227:15 231:8 232:15 233:18 235:11 250:21 253:3 254:15 257:3 266:13 273:3 277:4 278:15 281:5 291:14 301:17</p>
--	--	--	--

302:13 311:6 312:8 Corrected 261:20 CORRECTION 310:6 CORRECTIONS 310:3 311:7 corrective 264:18 correspond 230:16 285:18 counsel 215:4 216:6 219:6 312:13 counter 276:19 COUNTY 312:2 couple 271:19 course 243:22 COURT 214:1, 21 215:15 219:2, 14 cover 288:14, 15 289:3 Covered 234:15 285:2 covers 288:18 Crest 214:22 criteria 277:14 criterion 276:4, 15 277:1, 18 278:4 criticism 231:2 242:10, 19 244:21 285:11 criticisms 222:11 242:14 critique 235:2 276:9 cross-section 285:20 286:8 crunch 244:1 CSR 214:20 219:1 cubic 235:15, 22 237:15 293:9 294:1, 12 295:13 current 285:5 currently 248:23 cuttings 299:16 < D > dam 239:13, 14 302:21 305:10, 15	dams 263:9 Daniel 272:9, 11 data 238:15 239:22 243:22 249:13, 16, 17, 18 250:4, 5, 5, 16 255:23 256:3, 6 257:2 260:16 262:10, 16, 19, 21 263:15, 20, 21 265:14, 21 268:7 271:7 298:10, 10, 11 date 219:4 239:18 308:20 dated 270:22 311:21 David 217:22 DAVIS 217:16, 17 219:16 222:12 238:17 242:11 245:1, 20 246:9, 15 251:12 253:15, 18 254:7, 16 255:4, 13 256:8, 14 257:16 259:8, 17 260:18, 21 261:2, 10 263:19 264:11, 20 265:6, 16, 23 266:4, 10, 15 268:11 275:16 276:16 277:5, 19, 23 281:14, 22 282:12, 15 283:9 284:10, 22 292:16, 22 293:13 295:5 296:7 297:3 298:3 300:3, 8, 13 301:10 305:7 309:8 day 215:8 days 239:5 deal 220:6 deals 221:1 273:18 decisions 255:22 262:12 decreased 247:7 248:3 deep 307:9 deeper 306:18	Defendant 214:11 217:15 define 246:1 274:3 288:10 defined 230:15 defining 274:9 delineated 228:12 231:5 delineating 227:5 delineation 225:19 229:4 230:20 231:16 232:2 demonstrate 232:14 depend 245:22 306:7, 14, 16 dependent 265:2 depending 246:11 304:21 depends 265:18 289:5, 8 depicted 226:21 depicts 227:11 286:16 DEPONENT'S 218:11 311:1 deposit 246:5 deposited 294:13 304:10 DEPOSITION 214:13 215:5, 11, 13 216:9, 13 219:19 221:5 229:19 301:4, 5, 6 304:14 306:10 309:9 312:5 depositions 215:16 deposits 245:14, 16, 23 246:18, 19 247:15 306:2, 3, 3, 7 depth 247:10 303:21 derive 292:12 derived 286:11 291:20 describe 298:20, 21, 22 299:20 described 223:22 236:15 249:17	304:16 describes 299:19 describing 271:18 297:5 308:16 description 271:15, 17 design 255:8 designed 255:11 284:7 detail 223:22 298:19 detailed 239:16 300:2 determination 307:22 determinations 238:7, 23 determine 293:5 297:9 300:21 determining 234:23 developed 283:14 304:3 development 303:2, 6 304:17 Diab 217:22 diagrams 247:18 difference 234:23 235:22 237:4, 14 256:10, 12 257:10 291:2, 21 differences 234:22 235:15 243:8 different 230:17, 19 234:18 235:9 236:1, 15, 16 237:9 239:2, 3, 4 241:4 256:6 259:10 267:3 286:2 291:19 295:22 306:19, 20 differential 238:3 292:4, 5 digital 270:9 digitize 237:10 digitized 223:16 Dillard 217:10 dimension 223:14 Dimova 249:20 272:3 300:16 308:13
--	---	--	--

Dimova's 249:20 250:5 271:23 296:20 297:14 301:5 304:13 direct 273:19 279:18 disagree 282:2 283:6 284:21, 23 291:16 discharge 241:22 243:5 252:9 discharges 251:22 263:23 discharging 241:6 243:3 discuss 298:14 303:1 discussed 220:6 222:18 224:19, 21 233:2 discussing 259:12 discussion 221:20 226:15 259:5, 7 273:12, 14 290:20 discussions 245:6 259:19 disparity 257:15 display 291:4 disposal 238:20 247:6 253:6 dispute 294:2, 4, 13 distinction 224:19 238:8 distinguish 297:1 distribution 305:20 DISTRICT 214:1, 2 disturbance 303:9 ditch 256:5 DIVISION 214:3 document 253:17 254:2 260:5, 6 267:3 268:16, 18 271:13 274:22 275:5, 7, 17 277:1, 12, 13 278:9 286:10 299:15, 17 300:2 documented 252:12, 14 260:4	documents 278:3 298:12, 13, 13 299:7 Dowdy 214:20 215:6 219:1 312:17, 18 downloaded 270:10 downstream 250:17 252:6 289:21 290:11 300:21 301:21 303:12 304:9 Dr 249:20, 20 250:5 296:20 297:14 301:5 304:13 308:13 draft 271:9 drafting 261:23 270:1 draw 227:16 drawing 227:2 drew 231:5 232:14 drill 239:19 299:15 drilling 238:9 Drive 214:22 drop 304:21 DRUMMOND 214:10 244:19 254:10 274:15 Drummond's 242:5 duly 219:12 < E > earlier 232:14 254:12 270:22 291:2 295:8, 10 299:8 early 239:10 247:2 283:18 291:17 Earth 288:8, 8, 18 297:5 301:1 easier 221:2 easiest 289:23 east 256:5 edge 245:14 effect 215:13 efficient 219:21 249:10 eight 267:8 270:16 285:11, 14 299:2	either 246:18 279:16 285:15 308:18 Elements 269:7 elevation 229:9 231:13 234:22, 23 245:11, 13 287:6 291:21 elevations 229:5 239:15 else's 278:13, 17 endeavored 238:4 ends 227:13, 17 engage 283:22 entire 250:2 273:4 276:1 entirety 278:22 environment 251:18 275:19 ENVIRONMENTA L 217:4 EPA 271:12 274:21 298:13 equally 302:11 eroded 231:21 235:7 238:11 239:2 eroding 248:23 erosion 224:16 225:2, 2, 7, 13 226:2, 3, 3, 5, 7, 9, 11, 21 232:9 235:13 239:1, 5 247:7 248:2, 13 249:4, 5 284:20 289:3 292:8, 19 ERRATA 218:11 310:1 error 229:4 escarpment 232:10 essentially 244:8 establish 255:11 307:19 established 290:19 estimate 239:21 estimates 238:7 296:13 estimating 296:1 estimation 307:23	Eva 217:10 evaluate 262:11 evaluated 262:5 events 242:23 285:3 evidence 216:9 evident 282:19 exactly 233:8 EXAMINATION 218:3 219:9, 17 299:9 examined 219:13 example 299:13 exception 296:11 exchanging 267:23 excuse 258:21 273:7 Exhibit 218:8, 8, 11 220:11, 11, 14, 15 221:5, 18 227:22 229:18, 22 236:5 239:11 256:18 258:9 260:6, 7 270:21 279:2, 5 290:8, 11 301:4, 5, 12 Exhibits 231:10 existing 239:15 285:17 286:3, 12, 16 experience 222:1 274:21 297:18, 23 experiment 263:3 expert 220:11 221:7 251:15 expertise 222:1 EXPIRES 311:17 312:18 Explain 234:14 241:2 245:3 266:9 278:20 285:10 287:10 303:5 explained 277:11 explanation 232:17 287:17 exposed 249:4 285:4, 4 expressing 242:14 extended 303:23
--	--	---	---

extent 224:11 225:19 230:6, 20 260:21 264:21 274:9 275:16	filing 216:13 fill 241:15 final 267:19 find 221:16 268:2 309:2 finding 233:20 Findings 233:15 fine 220:15 finish 219:19, 20 finished 249:19 261:7 287:16 298:1, 6 first 219:12, 20 220:11 222:16 226:1 230:8 231:2 232:7 233:7 235:1, 12 237:8 261:15 268:6 270:7 272:18 273:10, 18 279:22 284:1 291:13 293:22 fit 236:1 five 224:6 237:13 240:4 287:19 flat 263:9 286:8 flawed 240:12, 14 Floor 215:7 217:18 219:7 FLORIE 217:16 flow 240:6 241:4, 21, 22 242:16, 19 243:9, 16, 18 244:22 245:5, 7, 8, 12, 18 246:7 249:11 flows 241:9 245:10 focus 220:3 following 219:10 follows 219:13 301:18 follow-up 249:6 footprint 231:6, 17 force 215:13 foregoing 219:5 312:4, 8 Fork 225:11 226:8 232:10 241:7 242:2 243:3 245:18 246:7, 14, 21 247:11, 16	248:23 249:2 250:3 251:22 252:16, 20, 23 290:13 307:7, 8, 18, 21 form 216:6 222:12 238:17 242:11 245:1, 20 246:9, 15 251:12 253:15 254:16 255:4, 13 256:8, 14 257:16 259:8, 17 260:18 263:19 264:11, 20 265:16, 23 266:15 281:14, 22 282:12 283:9 284:10, 22 292:22 293:13 295:5 296:7 297:3 formats 298:11 formulating 261:22 276:7 278:11 formulations 263:13 forth 258:16 291:1 forward 243:23 255:17 262:3, 10 275:23 Foster 242:4 Foundation 245:21 251:13 254:17 255:5, 14 256:9, 15 260:19 264:12, 21 265:17 266:1, 16 267:17 283:10 284:11 296:8 four 221:18 232:6 283:20 fourth 271:2 frame 253:23 Freedom 214:21 front 220:10 221:4 fulfillment 258:12 full 215:14 291:1 fully 232:4 FURTHER 215:10 216:4, 12 265:7 312:12 future 259:5, 15, 19 260:15 264:9, 18	282:10 283:5 fuzzy 227:4 < G > gain 293:22 294:10 gallons 243:16, 19 gas 298:17 299:19 gathered 257:18 gathering 298:10 general 296:22 Generically 284:12 Geologic 270:8 Geological 268:8 geologist 253:13 Geology 299:11 Geomorphology 270:13, 19 GEORGE 214:15 215:5 218:8, 10 219:8, 11, 18 261:14 311:4, 13 gesturing 225:15 give 261:3, 4 268:12 291:19 300:5 307:10 given 238:1 249:23 260:16 312:9 giving 248:12, 22 glad 268:10 glasses 223:9 go 220:4, 12 221:15 235:19 237:22 241:13 253:21 260:2 261:4 278:8 305:14 306:15 308:23 GOB 224:11, 16 225:3 226:2, 6, 10, 20, 23 227:5, 10, 17 230:20 231:6, 17 232:2 234:11 237:18 256:5, 7 260:17 265:5 282:21 283:23 284:20 292:19 295:15 297:7 goes 225:20 230:13
---	---	--	---

<p>going 220:10, 22 237:21 242:1 256:21 259:3 264:17 265:1, 4 274:8 278:21 283:22 295:7 301:3, 4 308:23 Good 280:8 286:9 Google 288:8, 8, 15, 18 301:1 grab 287:3 grain 296:23 297:4, 8 304:22 305:20 306:19 graph 292:4, 6 gravel 297:10 305:17 grays 228:17 Green 273:8 ground 238:9 288:14, 15 289:3 grounds 216:8 guess 226:14 230:22 244:18 250:11 253:1 268:3 282:16 283:11 Guidance 261:20 262:14 266:22 267:2 271:12 274:21 275:5 299:7, 9 guide 255:17 gullies 225:10, 13 232:8 < H > half 296:14 halfway 269:12 hand 287:4 handing 279:4 handling 241:16 harm 252:20 heading 273:12 headings 233:23 health 275:19 hear 298:3 305:7 hearing 312:10 held 226:15 290:20</p>	<p>help 223:17 Henry 269:12 hiding 294:15 historical 306:5 historically 288:20 holes 239:19 hone 267:5 honest 256:3 Hoover 214:23 hope 221:14 human 275:18 hundred 237:14 243:19 hundred-year 307:10 hydrologic 240:6 < I > idea 300:5 identification 229:23 279:3 301:13 identified 267:8 impact 243:19 251:7, 10, 21 252:6, 21 290:11 303:6 304:17, 18 implementation 277:2 implication 277:9 improve 264:9, 17 265:4 improved 263:17 264:2 265:14, 21 266:12 inaccurate 230:10 286:17 include 228:13 238:21 284:1 included 233:9 including 275:9 incorrect 232:3 incorrectly 231:4 increased 265:10, 22 266:12 increasing 265:15 independent 237:16 295:20 296:4, 16</p>	<p>indicate 227:1 228:16 229:5 246:23 247:19 248:19 269:22 288:23 300:20 302:16 306:9 indicated 223:16 239:19 252:7 254:2 indicates 244:16 246:17 251:7 275:6 299:14 Indicating 227:18 indication 285:3 indicative 250:2 individually 222:14 indulge 285:13 industry 297:20 298:17, 18, 18 299:18, 19 inflow 304:19 305:5 inform 253:13 information 235:20 236:7, 18 237:7, 20 238:12, 15, 20 244:3 246:2, 16 247:8 249:14 251:7, 14 252:4, 5, 6, 13, 23 257:17 269:23 270:3 271:8 274:14 275:22 278:11, 16, 22 279:14, 21 292:7 293:7, 7 298:22, 23 302:10 infrared 228:15 initial 224:22 230:12 initially 255:16 in-place 283:15 inshore 251:9 inside 278:12, 16 279:7, 22 280:6, 10, 16 281:1 instance 274:6 instances 279:20 Institute 308:9 instrument 223:9,</p>	<p>10 intended 233:21 interested 312:14 intern 272:15 interned 272:13 interpret 224:12 298:21 interpretation 221:20 229:15 235:23 293:1 298:10 interpretations 240:11, 13 interpreting 222:19 interval 230:4, 5, 10, 15 237:5 intervals 234:16 291:4 introduction 281:3 investigation 252:15 266:21 267:18 272:20 investigations 247:12 255:8, 10, 15, 16 267:4 iron 257:6, 8 issue 222:10 231:16 237:11 241:13, 20 253:14 issues 220:5 259:6 260:15 italics 278:19 279:17 item 261:19 items 274:19 276:3 297:17 its 239:7 240:1 242:21 278:22 < J > JEFFERSON 312:2 job 261:7 Johnson 240:10 241:3 242:16 250:18 271:4 275:15, 20 277:16 279:16, 19 280:13 284:19 286:14 287:11 289:10</p>
---	--	--	--

Johnson's 218:10
 240:13, 20 275:17
 278:23 279:9, 23
 280:5 281:11
 282:14 283:21
 296:1
Jorge 217:21
June 214:17 215:8
 219:7

< K >
Key 244:11, 14, 17
Kimberly 214:20
 215:6 219:1
 312:17, 18
kin 312:13
kind 283:15
knew 259:23
 260:10
know 222:7
 229:20 245:4
 249:6, 12 258:5
 259:10 267:10
 272:3, 5, 9, 11
 274:23 276:6, 11
 286:18 289:15
 292:10, 16 302:1
 303:19, 21 308:7
knowledge 248:8
 308:19 311:7

< L >
labeled 286:7
 287:5
laboratory 257:5
land 286:5 287:4
 299:20 303:9
 304:4
landfills 289:11
language 232:11
 241:7 283:21
large 303:9
larger 223:10
 270:11
lateral 306:1, 3
latitude 249:22
LAW 217:4, 21, 22
laws 215:14
leading 216:6

274:9
leave 257:15
leaving 252:9
 260:14
left 300:6, 20
 301:21 302:5, 12
legal 254:13 255:2,
 7 257:18 260:20,
 22 261:3
legally 254:14
legend 224:13
 230:16
level 306:8
liability 260:15
library 269:20
limited 239:11
 249:2, 21 252:3
 288:22
line 227:16 231:18
 285:17, 19 310:6
lines 224:21
 225:14, 16 286:2, 2
 291:3
list 261:19 267:14
 274:12, 18 275:1, 6,
 9, 12 278:9 297:16
 299:2 308:2 309:1
 310:3
listed 268:2
 275:14 277:1
 278:4 295:9 299:2
 311:8
liter 257:8
literature 292:10,
 11
little 227:3 234:15
 279:12 290:22
live 251:18
LLP 217:16
loading 303:11
locate 270:7
location 264:14
 300:19 305:10
 306:18 307:5, 15
locations 225:10
 249:23 266:17
 290:3
Locust 225:11
 226:8 232:10
 241:7 242:2 243:3

245:18 246:7, 14,
 20 247:11, 16
 248:23 249:2
 250:2 251:22
 252:16, 19, 23
 290:13 307:7, 8, 17,
 20
logging 299:15
LOIS 214:15
 215:5 219:8, 11
 311:4, 13
longitude 249:22
look 220:13
 221:15 223:11
 225:11 229:20, 21
 236:5 238:19
 242:7 252:4
 256:16 258:1
 270:18 286:21
 288:19 294:22
 303:17 307:16
looked 220:14
 223:4 234:4
 246:16, 22 247:8
 252:8, 11, 12
 255:23 256:19
 263:15 268:20
 269:22 270:22
 271:12, 13 288:20
 291:6
looking 221:10
 224:10 228:1, 10
 231:3 232:6
 249:13 258:9
 268:15 271:8
 288:17 290:4
 294:17, 18, 19
 298:17 299:13
 305:19
looks 223:10
 233:16 271:16, 19
 308:2
loss 235:21 291:18,
 20
lot 248:9 255:12
 259:10
Lots 289:8
low 263:8
lower 229:1 239:13

Lynn 247:9

< M >
ma'am 219:16
macroinvertebrates
 251:10
magnitude 256:13
 257:11
Maher 299:10, 14
Maher's 300:2
maintenance
 282:10, 13, 16, 19
 283:4 284:8
majority 248:19
 288:12, 12
makeup 289:8
making 268:1
Manual 261:20
 262:7 266:22
 299:9, 12
map 224:21
 228:20 229:11
 230:2, 11 234:17,
 18, 20 235:10
 270:8 285:16, 20
 286:6 290:1
mapping 223:20
 227:20, 21 239:16
maps 221:21
 222:19, 22 223:16
 229:5, 10 230:3, 5,
 7, 8, 8, 12 235:23
 236:14, 15 237:2, 3,
 4, 9 239:15 291:3,
 19, 22 301:2
March 312:20
mark 226:12
 229:18 301:4
marked 221:5
 229:17, 23 279:3, 5
 286:22 301:13
material 237:18
 239:20 246:6
 247:15 251:3
 259:4 282:9 285:5
 289:13 293:8, 23
 295:15 296:2, 14
 297:1, 9 299:22
 305:18

materials 245:17 246:13, 22 272:18 297:6 303:12 308:17, 17 Maxine 238:19 244:19 251:22 262:16 263:7 275:11 277:3 283:16 289:16 McCalley 269:13 mean 223:7 228:20 245:3, 8 249:14 263:2 268:14, 15 274:3 290:12 295:3 305:17 306:2 means 245:5 246:2 285:11 308:7 312:7 meant 224:16 225:2 233:9 282:19 measure 238:9 measured 247:10, 23 measurements 256:11 measuring 263:23 memory 271:13 276:18 mention 259:15 274:2 met 272:4 method 281:17 methodical 277:14 methodologies 222:23 methodology 222:6, 17, 18 236:11, 12 242:10, 15 243:12 292:12 methods 289:12 Metzger 269:17 middle 250:12 258:1 267:12 302:23 migration 284:2 milligrams 257:8 millimeter 305:21	million 293:8 294:1, 12 295:13 mind 286:22 299:3 Mine 244:19 246:6, 14 248:22 251:23 252:9 262:16 284:14 mineral 298:18 minimize 284:7 Mining 253:8 269:7 293:23 minute 243:17, 19 256:21 minutes 300:8 mitigation 251:4 mixing 252:4 290:19 MO3 239:14 model 243:18 262:11 modeled 243:14 modeling 237:7 243:22 Monday 220:15 253:18, 19 254:7, 8 255:23 256:19 261:4 273:8 monitoring 255:19 282:13, 17, 20 283:5 284:8 month 253:21 months 272:15 Montiel 272:10 morning 221:6 morphological 301:19 move 227:11 255:17 262:3, 10 270:21 275:23 moved 296:2 moving 230:6 240:23 < N > narrow 299:1 narrower 274:12 290:22 National 308:9 native 297:1	natural 225:13 226:3 232:9 244:20 245:23 246:18 249:4 251:2 265:3, 7 267:13 307:7 naturally 264:9 nature 272:21 near 225:16 226:7 235:21 294:8 304:4, 10, 19 near-shore 251:9 necessarily 267:21 306:22 307:15 necessary 216:5 need 221:13 226:12 229:20 254:8 262:10, 15 284:8 287:13 300:6 307:19 needed 298:20 neither 312:12 net 235:21 291:18, 20 293:8, 22 294:10 nine 274:19 275:13 277:1 293:9, 17 NIST 308:5, 7, 12 non-native 297:1 nonnatural 245:17 246:5 north 227:13 NORTHERN 214:2 Notary 219:2 311:16 notice 216:13 258:17 notices 254:21 NOV's 255:18 NUMBER 214:5 229:22 234:4, 6 235:9 236:1 240:5, 8, 9, 23 244:1, 6, 9 249:21 250:12 252:19 253:2 267:10 268:17 271:14 279:2 291:22 292:4	301:12 304:8, 10 numbered 234:6 numbers 234:3 236:3 285:15 286:19 287:14 294:23 296:6, 9 numeric 237:19 292:5 numerically 291:20 numerous 240:16 < O > oath 219:12 Object 222:12 238:17 242:11 245:1, 20 246:9, 15 251:12 253:15 254:16 255:4, 13 256:8, 14 257:16 259:8, 17 260:18 263:19 264:11, 20 265:16, 23 266:15 275:16 276:16 277:5 281:14, 22 282:12 283:9 284:10, 22 292:22 293:13 295:5 296:7 297:3 objection 261:2, 5, 10 277:19 278:2 282:15 objections 216:5, 7 265:6 obligated 254:14 obligations 259:6, 16, 19 observations 248:18 250:7, 8, 9 284:23 obstruction 249:15 obstructions 246:17 247:19 obviously 248:7 251:17 occur 241:19 260:13, 23 occurred 241:18 261:9 265:8 307:14
--	--	--	---

<p>October 244:16 258:2 275:4 290:8 offer 295:7 offered 216:9 offering 234:8 Oh 269:4 300:1 305:4 oil 298:16 299:19 Okay 223:21 224:23 225:23 226:17 227:1 229:17 231:1, 22 233:6, 21 237:21 240:15 246:4 247:20 248:11 250:15, 23 252:18 257:20 267:14 268:13 269:6 279:5, 9 280:8 284:6, 18 285:7, 23 287:16, 19 298:2 299:6 302:10 305:23 309:7 Oklahoma 299:16 old 285:11, 14 older 229:10 285:14 ones 273:16 274:12 277:22 ongoing 284:8 online 268:3 309:2 onshore 303:1, 6 opened 244:15 operations 244:18 opining 252:20 opinion 227:19 230:7 233:18, 20 234:7 240:5 241:8 242:12 244:5, 10, 11, 14, 17 248:12, 22 250:11, 16 251:19, 20 252:19, 22 253:2, 13 261:3 267:11 276:12 281:18, 23 282:7, 18 283:12 284:16 287:23 289:2, 7, 9, 17 Opinions 233:16 240:12, 13 261:23</p>	<p>266:23 267:8 270:17 273:11, 15 275:15 opposed 255:2 283:7 297:10 opposite 301:8 option 280:18 oral 219:9 order 238:23 253:8, 12, 23 254:21 262:3 291:23 orders 256:12 257:10 organisms 251:10, 18 original 230:18 235:4 270:10 294:23 outlined 224:11 225:6 226:8 232:23 233:1 274:6 292:23 298:12 outlines 222:20 outside 225:3 226:10, 19 overhead 288:15 overlaps 223:13 overlying 234:21</p> <p>< P > p.m 219:8 261:13 309:10 PAGE 218:3 221:18, 19 232:6 236:6 240:4 244:6, 11, 15 250:12 253:10 257:22 258:1 267:11, 12 268:6, 15 269:12 270:6 271:2, 19 275:4 278:18 280:10, 12, 13, 21 281:3, 3, 5, 7, 10 283:20 284:19 285:7 287:19, 20 288:9 289:20 293:9, 15, 16 294:8, 9, 21 295:23</p>	<p>296:12, 19 297:12 299:13 300:18 302:11, 16 303:1 310:6 PAGES 214:16 262:7 268:16, 17 287:12 pair 223:9 pairs 223:12 paper 223:5 270:10 paragraph 232:7, 19, 20, 22 258:1 271:2 273:20 289:20 290:9 294:9 302:23 parallel 225:14, 15 306:4 paraphrase 250:21 279:19 paraphrasing 250:15 part 223:17 225:16 236:7 240:7 258:13 267:11 269:22 273:22 279:10 280:14 282:4 293:18 304:11 particular 222:3, 23 228:22 262:6 267:9 270:17 279:10 particularly 228:14 307:5 parties 215:4 216:7 312:13 parts 270:4 293:21 party 267:21 pathway 284:3 pathways 284:5 pause 300:3 peak 241:9 PELA 239:7 240:1 247:1 248:8 249:18 256:20 259:20 269:19 270:21 272:13 290:19</p>	<p>PELA's 250:4 252:14 263:16 280:1 perform 239:7 performed 242:4 308:14 period 272:14 294:11 permanent 281:12, 21 282:5 permit 254:22 260:8 Permitting 258:20, 23 259:1 personal 269:4 pertains 253:2 pertinent 231:10, 15 photo 225:17 228:1, 2 235:10 288:16 photograph 225:5 227:3 228:14, 15 288:16 photographs 223:23 228:3, 4, 8, 11 250:8 288:5 photography 221:21 222:22 223:2, 12, 12 227:20, 23 248:19 288:2, 7, 17, 22 302:17 304:8 306:1, 5, 8 photos 222:6 303:17, 20 physically 244:19 picture 307:10 pile 224:12, 16 225:3, 20 226:20, 23 227:10, 17 228:13, 16 229:1, 4 230:20 231:6, 17 232:2 234:11 238:4 246:19 249:3 256:6, 7 260:17 263:18 264:1, 4, 17 282:21 283:23 284:20 289:1 295:15 pilot 262:23 263:3, 10</p>
---	---	--	---

<p>pine 285:2, 2, 4 289:4</p> <p>pink 228:15</p> <p>pinpoint 268:22</p> <p>Place 215:7 217:18 219:7 282:22 283:7, 13, 23</p> <p>placed 231:20 235:6 238:22 239:1 295:15</p> <p>placement 292:19</p> <p>Plaintiff 214:8 217:3</p> <p>Plaintiff's 218:8, 8, 11 229:22 279:2 301:12</p> <p>play 270:16</p> <p>please 244:7 256:17 257:22 310:3, 4</p> <p>plot 301:7</p> <p>plotted 305:13</p> <p>plotting 301:1</p> <p>point 226:14 231:11 233:21 243:2 244:4 248:3, 5 274:18 289:10 290:16 292:2 305:5 307:3</p> <p>pointing 279:6 285:21</p> <p>points 264:7 266:6, 18, 19 275:13 291:11 292:5 301:8</p> <p>pollution 282:21</p> <p>pond 229:1</p> <p>portion 235:1 259:4 280:17</p> <p>portray 224:16 230:11</p> <p>positive 280:2</p> <p>possible 238:2</p> <p>post-law 237:18 254:10 255:11 256:7, 23</p> <p>potential 242:1 274:11 304:16, 18</p>	<p>potentially 239:1 303:13</p> <p>potentials 241:4</p> <p>Practical 269:7</p> <p>preceding 309:9</p> <p>precise 295:4</p> <p>precisely 305:9</p> <p>precision 234:22</p> <p>preferable 308:12</p> <p>pre-law 237:18 254:11 255:12 256:5 257:3 263:17, 21 264:17 265:5</p> <p>pre-mining 293:6</p> <p>prepare 273:4, 9</p> <p>prepared 234:17, 19, 20</p> <p>prescribed 289:12</p> <p>PRESENT 217:21</p> <p>presentation 230:9</p> <p>presented 253:14 277:15</p> <p>press 300:9</p> <p>Pretty 267:1 300:10</p> <p>previous 294:9</p> <p>previously 229:18</p> <p>principle 296:22</p> <p>Principles 270:13</p> <p>prior 216:9</p> <p>Pro 288:8</p> <p>probably 233:19</p> <p>problem 274:9</p> <p>problems 281:21</p> <p>Procedure 219:5 243:12</p> <p>procedures 274:5, 7, 8 297:20 298:16, 19</p> <p>proceedings 219:10</p> <p>process 223:17 267:18</p> <p>processes 265:3</p> <p>processor 273:7</p> <p>Professor 272:3</p> <p>profile 307:15</p> <p>program 263:10 283:23 288:20</p>	<p>progress 260:8</p> <p>progression 288:21</p> <p>projects 272:7, 12</p> <p>promise 220:1</p> <p>property 282:11</p> <p>proposal 283:15</p> <p>protocols 297:20 298:9</p> <p>provide 246:2 255:17 268:11 278:1, 2 309:4</p> <p>provided 219:4 235:20 236:7 239:17 255:21 260:5 273:8</p> <p>provision 267:15</p> <p>provisions 289:11</p> <p>proximity 303:2 305:16</p> <p>Public 219:2 268:10 311:16</p> <p>publically 309:3</p> <p>publication 268:9</p> <p>publicly 267:23 268:2</p> <p>published 235:10</p> <p>pull 279:1 287:13</p> <p>purely 236:3 244:2</p> <p>purpose 271:3</p> <p>put 220:10, 22 226:4 234:3 243:23 262:10 276:8, 9 277:8, 10 279:6 280:10</p> <p>< Q ></p> <p>quality 241:5 247:9 251:16, 17, 19, 21 252:13 256:20</p> <p>quantitatively 249:9, 12</p> <p>quantity 249:10</p> <p>question 220:1 223:18 231:12, 23 232:23 236:11, 12, 14 240:18 244:17 246:5 248:21 249:6, 20 257:21 259:9 260:23</p>	<p>264:15 265:21 266:3, 5, 11, 14 276:20 277:21 278:1, 10 290:23 294:9 295:6, 18, 22 299:1</p> <p>questionable 235:1</p> <p>questioned 222:5</p> <p>questioning 236:19, 23 237:2, 5 244:22</p> <p>questions 216:6 222:11 242:15 261:18 312:6</p> <p>quick 261:12</p> <p>quote 281:12 284:19 290:10</p> <p>quoted 280:16 281:11 283:21 284:18 293:9 295:23</p> <p>quotes 279:18</p> <p>quoting 278:12, 17 279:11, 23 280:2</p> <p>< R ></p> <p>rain 241:10 285:3</p> <p>rainfall 265:2</p> <p>rate 235:13 241:22 248:2, 12 292:8, 9</p> <p>rates 239:4 292:19</p> <p>rationale 281:11</p> <p>RCRA 274:7</p> <p>read 219:15 234:2 244:21 258:5, 6 275:15 276:23 301:10 311:5</p> <p>reading 215:11 236:10 247:17 257:7</p> <p>really 220:3 238:1 239:6 254:12 262:9 265:20 266:3, 4 272:5 283:11 289:7 305:9</p> <p>reason 257:13 264:8 277:7, 8, 10, 10</p>
--	--	---	--

reasons 254:13 255:2, 3, 6, 7 294:5	288:9 299:17 308:2 309:1	relevance 299:23 304:17 306:12	13, 17, 23 279:1, 4, 10, 15, 16, 18, 23
rebuttal 220:16 222:21 223:15 224:18 229:14, 19 233:3, 11 235:5 236:4, 6 270:21 271:5, 9 273:2 279:1, 4, 10, 15, 23	References 261:16 267:20 268:1 271:14 299:10, 11, 14	relevant 277:9 302:8	280:1, 10, 17 285:16 287:19 290:8 293:10 294:19, 21 296:1 297:12, 14 298:15, 23 300:16, 19 301:1, 9, 11, 16 304:1
Rebuttals 218:8, 10	referencing 290:6	relied 240:20	REPORTED 214:19
recall 222:9 227:6 239:17 247:17 261:6 289:13, 14	referred 221:8 241:4 297:6 302:9	relies 240:10	REPORTER 218:11 219:2, 14
reclamation 255:20	referring 245:6 251:1, 15, 16 264:13 280:13 283:3 289:22 290:15 299:8 302:4, 6 303:8	rely 270:1	REPORTER'S 312:1
recognized 223:1	reflect 230:2	remaining 296:14	Reporting 214:21 298:11
recollection 239:9 259:5, 22	reforested 288:3, 11	remedial 264:10 274:11	reports 220:4, 9 251:15 260:8 271:5, 8
recommend 262:22	refresh 271:13	remediate 262:12, 20	represent 226:11
recommendation 275:21	refuse 225:19 228:13, 16, 21, 23 246:19 249:3 251:3 276:1 285:5 289:1	remediation 250:18, 23 262:4, 17, 18 265:9 266:21 267:6, 6, 19 281:16 296:3	representation 241:18 307:12, 13
recommended 250:18	regard 229:2 285:12 305:23	remedy 274:10 277:3	representative 306:23 307:6, 17, 20
recommending 281:17	regarding 222:16 230:3 242:12 247:6 259:11 267:12 270:19 271:14 273:20 281:18	remember 219:23 221:10 259:18 261:8, 11	represents 231:19 312:8
record 223:6 226:16 228:7 261:14 290:21 294:16	regardless 291:4 293:20	removal 251:3 280:17 281:12 282:3, 9 283:4	reprint 269:16
red 224:11, 15, 20 225:17 226:19 227:4 228:15 230:21 231:18 232:18 233:1, 2, 8 293:1	regard 229:2 285:12 305:23	removed 276:1 281:20 296:15 303:9	reproduction 269:15
redevelopment 267:15	regarding 222:16 230:3 242:12 247:6 259:11 267:12 270:19 271:14 273:20 281:18	removing 284:15	request 309:3
reduce 282:10 283:4	regardless 291:4 293:20	repeat 220:1	require 274:10
refamiliarize 270:4	regard 229:2 285:12 305:23	report 218:8, 10 220:11, 16, 23 221:1, 7, 9, 10 222:4, 8, 9 223:15 224:22 229:14, 19 232:7 233:2, 4, 12, 14 234:2 235:4, 5, 14 236:4 238:5 240:5, 17, 17 241:7 244:16 245:6 252:12, 14 253:2 256:20 257:17, 23 258:2, 8 259:4 261:15, 23 262:8 266:23 267:16 269:13 270:2, 17, 21, 23 271:3, 9 272:1, 18, 19 273:2, 4, 9, 10 276:14, 16, 23 277:5 278:11,	required 267:4 requirement 267:18 requirements 254:4, 22 255:19 257:19 258:12, 15, 20 259:1, 7, 13 283:5
refer 221:2 224:2 229:13 239:11 280:21 285:8 286:2, 3 287:20 289:20, 23 308:3	regardless 291:4 293:20	reincorporating 281:9	research 272:7
reference 223:2 230:22 231:9 253:8 254:1 259:3 272:17 275:1, 6, 18 277:12, 18 286:9	regardless 291:4 293:20	reiterate 254:8	residence 241:9
	regardless 291:4 293:20	relate 241:5 285:16	respective 215:4
	regardless 291:4 293:20	relates 234:10 244:11	respects 277:17
	regardless 291:4 293:20	relating 215:15	response 222:9 223:3 224:19 280:23 291:3, 6 295:12
	regardless 291:4 293:20	relation 286:8	rest 302:8
	regardless 291:4 293:20	relationship 306:11	
	regardless 291:4 293:20	relative 241:16 247:21 305:10	

restoration 250:13 267:13 273:19 276:13 283:22 284:4 Restoring 251:2 result 232:9 242:6 312:14 resulting 236:16 237:2, 3 results 225:6 236:14 244:2 252:8 266:12, 19 267:19 resumé 220:8 retention 242:23 retrieve 299:20 revegetation 265:7 288:21 review 222:6 223:1 255:22 reviewed 223:23 251:14 302:16, 18 304:13 reviewing 289:13 revised 294:23 308:21 revisions 229:15 230:2 Richard 217:17 268:5 309:4 ridge 225:12, 12 226:19 right 221:21 224:9 227:12 231:7 233:9 234:8, 14 236:8 240:23 244:12 255:1, 10, 12 256:1 258:9 260:11 262:19 270:20 271:5 273:12 275:7 276:23 279:6, 7, 21 280:18 282:8 299:16 301:14, 16, 20 302:4, 12 303:3 309:8 risk 262:4 267:2 277:12 Risk-Based 261:20 risks 262:11	river 225:1 245:15, 17 290:16 297:2 300:21 301:9, 21 303:22 304:6 305:5 306:8, 23 307:11, 12, 16 riverbank 307:6 RIVERKEEPER 214:7 217:11 riverside 226:20 rock 247:6 253:5 271:14 305:18 RPR 214:20 219:1 312:18 rules 215:15 219:4 runoff 241:2, 10 254:10 255:11, 12 256:4, 7, 22 257:2 264:4, 16 265:1, 1, 5 < S > sample 243:1, 4, 9, 16 249:23 299:9 300:19 301:8 302:14, 20 303:7, 11 304:5, 12, 18, 23 305:10 306:13, 16, 21 307:5, 9, 17 sampled 249:21 290:17 305:16 samples 251:5 265:18 289:21 299:20 301:22 302:7 303:18, 20, 22, 23 sampling 252:8 263:16 264:6 265:14, 21 266:6, 12 272:20 290:1, 2 299:23 303:3 304:4, 19 306:6 Samuel 269:6 sand 306:5 satisfied 254:3, 23 satisfying 255:18 saw 242:6 saying 223:21 226:1, 18 227:10 237:10 238:14	250:16 251:4 275:10 291:8 293:22 296:13 302:11 305:4 306:21 307:4, 4 says 232:8 240:16 245:7 258:11 268:6, 14 273:12 275:23 281:12 283:21 284:6, 19 300:19 scale 234:18, 19, 20 236:16 237:9 305:20 scenarios 283:16 296:3 scientific 248:17 253:14 255:2, 8 257:13 274:13 308:9 scope 274:10 scoping 274:2 screen 274:11 screening 274:2 seams 270:5 Second 217:7 220:12 230:7 231:4 232:8 234:7 235:3, 14 248:21 258:4 261:19 272:19 273:20 284:6 secondary 299:4, 6 seconds 305:12 section 232:7 233:15, 16 234:5 253:7 261:15, 16 262:2, 13 273:12, 14, 18 295:23 sections 262:6 sediment 248:22 249:1, 15 271:17 306:9 307:7, 7 sedimentation 307:14 sediments 297:7 303:14 304:9, 21 305:6 306:18 see 223:13 225:1 232:11 240:7	242:3 253:10 258:13 260:16 263:4 273:22 280:14 285:8 287:14 291:1 300:17 seen 305:15 segregation 254:9 selection 267:6 274:14 sentence 232:8 274:2 278:19, 20 279:22 280:5 293:19 294:10 301:11 separate 233:18 separately 311:8 set 258:15 271:3 308:11 seven 257:22 Shady 214:22 shape 247:22 SHEET 218:11 310:1 shift 292:1 shore 304:11 shoreline 250:1 shorter 304:2 show 225:2 256:21 291:21 301:3 showed 227:22 247:10 256:4 306:1, 6 shown 226:18 228:17, 19 231:7 286:12 shows 224:13 226:2 227:14 290:2 301:8 side 301:8 sign 219:15 signature 215:11 significant 229:15 simply 232:1 286:15 single-spaced 233:17 sir 221:22 222:2 233:13 234:1, 9, 13 244:8, 13 250:14
--	--	--	--

253:4, 11 258:7 260:12 261:6, 11, 17, 21 271:1, 22 273:13, 21, 23 275:2 279:8 280:3, 11, 15, 22 281:2, 8 285:9 287:8, 22 288:4 293:5 294:7 295:11 296:21 297:21 302:19 303:4 308:4 Sisk 221:3 247:9, 14 Sisk's 221:5 249:18 250:5 290:7 site 243:2 244:19 246:6, 14 248:8, 14, 20, 22 249:6 250:9 251:2 252:10 256:11 257:15 260:14 265:22 267:13 268:22 273:1 274:14 275:11 281:21 282:21 283:16 284:5, 14, 15 288:1 289:16 294:13 296:14 302:20 303:3 304:19 sites 249:21, 23 298:14 300:20 302:14 six 244:11 267:12 size 296:23 297:4, 8 304:22, 22 305:20, 21 306:20 sizing 305:18 slope 285:17 286:3, 3, 12, 16 289:5, 6 slopes 239:4 284:20 285:1 slough 303:15 sloughing 284:21 slow 300:4 smaller 293:21 software 236:20 soil 289:8 soils 271:18 Solis 217:21	solution 281:13, 21 282:5 somebody 278:17 279:11 somewhat 235:1 sorry 219:19 235:19 241:13 258:23 260:2, 7 264:3 276:22 277:20 282:22 285:22 287:1, 2 290:7 291:15 293:14 298:7 sort 243:7 262:4 263:10 source 230:3 297:16 299:4, 6 South 217:7, 12 225:12, 20 227:11 231:5 SOUTHERN 214:3 217:4 231:16 232:2 Spatial 236:20 speak 275:17 276:17 277:6 278:3 specific 243:6 250:23 252:15 262:1, 2 263:12 264:6, 14 266:20 277:18 300:11 305:21 specifically 215:12 262:13 263:21 271:4 279:15 296:12 297:6 specifics 283:13 specified 266:6, 6 specifies 267:3 speculation 264:22 speculative 234:12 292:9 spot 304:4 stabilization 284:17 stabilize 284:14 stack 228:5 Staff 217:10	standard 297:19 298:11, 16, 19 308:3 standards 271:17, 20 275:20 308:6, 11, 15, 15, 18 STARNES 217:16 start 221:19 started 231:3 248:8 291:23 293:23 starting 279:5 starts 234:5 240:5 258:2 273:20 293:19 State 219:2 274:8 312:2 stated 301:9 statement 291:16 STATES 214:1 steep 232:9 284:19 285:1 steeper 286:7 stenotype 312:5 step 293:22 steps 267:5 277:13 stereo 223:12 stereoscope 223:8 stereoscopically 223:5, 7 STIPULATED 215:3, 10 216:4, 12 stipulation 219:5 stipulations 219:14 stopped 298:5, 8 stopping 289:3 storm 241:1 242:23 straighten 287:11 straightforward 240:18 strata 270:5 straw 285:2, 4 stream 245:10, 14 251:8 270:19 306:4 streams 244:20 Street 217:12 strongly 282:2	structured 233:15 student 272:9 studies 247:1 249:18, 19, 20 subject 261:5 substantial 270:1 substantially 265:12 288:3, 10 substantiating 275:22 subsurface 299:21 308:16 sufficient 223:22 237:20 243:22 249:14, 14 262:10 sufficiently 298:22 Suite 217:7 summarize 295:17 superseded 308:19 supports 292:11 Sure 222:15 225:9 229:7 242:18 249:1, 5 254:18 256:18 259:11 263:20 273:1 274:5, 23 286:14 287:10 289:21 295:6 300:4 301:10 305:9 309:6 surface 243:2 244:20 253:8 254:9 264:16 286:5 287:4 290:10, 12, 14 299:21 308:17 Survey 268:8 susceptible 284:20 SW1 290:5 SW15 290:5 SW2 256:22 257:7, 9 SW3 256:4 257:2, 7, 9 SW8 263:22 SW9 263:22 Swanson 299:9, 22 sworn 219:12 system 282:20
---	---	--	---

Szabo 270:7	testimony 226:17 238:14 248:1 254:12 291:2 295:17 311:5 312:9	294:3, 20, 23 298:7 301:6 309:7	13
< T >		Thornbury 270:13	treating 241:17
table 270:11		thought 231:11 305:11	treat-in-place 282:20
tables 221:7 256:16	testing 250:17 252:11 272:20 308:10	thousand 237:15	treatment 275:21 283:15
take 220:13 225:22 238:8 243:1, 15 258:4 261:12 276:17	tests 262:23	three 223:13 235:7 265:6 278:18 280:12 304:6	trees 284:15 285:2 289:4
taken 215:5 235:10 256:4, 6 261:13 264:10, 19 265:19 267:4 277:15 300:14 306:17, 17, 22 312:5	textbook 270:15 textbooks 298:14	time 216:8, 8 219:20 220:9 225:22 228:13 233:7 239:2, 21 241:9 242:23 243:6 254:4 257:19 266:18, 19 272:14, 18 274:8 291:11, 12 294:11 306:8 308:1, 22	trial 216:8 Tributary 252:21 296:15 303:14
talk 222:13	thank 219:18 221:17 257:21 290:9 309:8	timeframe 259:14	true 220:13 301:14 311:6 312:8
talked 219:23 222:20, 21 254:5 259:10 273:17 290:18 291:17 295:8 298:13	thereto 216:10 312:6	timeframes 292:1	try 219:20 220:2 243:8 248:10
talking 223:19 224:7 228:23 229:3, 3 234:16 259:14 263:22 264:3, 16 271:21 298:5 301:20, 22	thickness 238:10 239:19 245:22 246:11 304:11, 12	times 235:7 240:17	trying 231:1 287:3, 9 293:20 295:3 300:9 304:4
tasks 260:3	thicknesses 246:18	today 219:19 220:3 243:16 261:3	turn 221:19 222:5 240:4 257:22 296:19
techniques 223:1	thing 226:1 231:4 246:1 284:6 289:5 300:1	tools 237:1	turned 261:15
tell 228:7 243:4 244:6 257:6 262:13 268:19 288:14	things 220:5 222:7 259:10 267:22 269:21 271:20 279:19 284:1 286:23 299:2	top 244:11 268:6 278:18 283:20 288:23 293:16, 18 296:12	two 220:4 225:13, 15 228:11 234:6 236:6, 13, 15 239:18 244:15 251:5 263:9 270:6 271:20 272:15 281:6, 7, 10 286:1, 2 291:19, 22 292:5
telling 232:13	think 219:23 220:18 221:1 227:17 229:11, 12, 17 230:2 231:23 232:5, 19 233:7 237:17 238:6 240:1, 3, 8 242:6 244:3 246:10 247:5 251:15, 16 253:16 256:19 257:14 258:19 259:2 260:20 262:7 266:1 267:17 272:23 273:7 276:19 277:11 279:13, 19 280:7 281:15 282:1 285:12 286:5, 22 287:18 288:2 289:23 290:18 292:9	topic 257:23	typed 233:17 299:3
ten 243:16 300:8, 11		topographic 221:21 222:22 223:20 229:5 230:5, 14 234:18, 20 235:21 236:8, 13, 15 239:15, 16	typical 262:4 306:23
term 227:6, 8 244:22 305:17, 18		topography 229:11	typically 274:10 308:16
terminology 270:19 283:1		total 257:6, 8 282:2 295:14	< U >
terms 230:19 303:22		toxic 242:22	ultimate 292:14
test 263:3 276:18		transcribed 312:6	uncover 296:15
tested 241:12		TRANSCRIPT 310:4 311:5 312:9	underlying 291:4, 14
testified 219:13 221:23 256:19 273:7 301:7		transcription 312:7	underneath 298:17
		transported 304:9	understand 224:10 226:17 227:9 229:7 231:1 233:5 235:17 240:19 259:11 266:14 272:13 283:12 285:15 286:11, 13
		travel 303:12	
		treat 282:22 283:7,	

289:22 295:3 304:5 understanding 224:17 227:10 238:13 248:1 254:19 259:9 260:4 296:10 301:6 312:11 understood 231:2 235:8 254:12 291:1 uniform 247:21 UNITED 214:1 unvegetated 288:23 upkeep 282:10 upper 239:14 upstream 250:17 252:5 289:20 303:11 use 222:21 227:8 236:19 237:6 244:22 261:22 262:1 266:22 267:7, 16 274:13 275:22 291:22 292:7, 11 USGS 230:7 239:15 Usual 219:14 utilized 232:18 299:18 < V > valid 296:23 297:9 valley 241:5, 15 value 238:10 239:5 values 230:16 252:16 variability 291:19 variables 289:8 various 296:3 vary 306:19 vast 235:5, 15 288:12 vastly 256:6 vegetated 248:20 285:1 vegetation 228:16, 18, 19 265:10, 14, 22 266:11 285:6	287:23 289:3, 12 303:9 vegetative 288:15 versus 232:18 233:1 257:7 308:12 vicinity 263:9 306:6 view 225:8 232:1 viewing 222:18 223:8 vintage 236:16 violation 254:21 Violations 258:18 visible 306:7 visit 248:20 273:1 VOLUME 214:16 235:18 237:17 238:3, 8, 21 239:20 242:1, 3 291:18 293:22 294:10 volumes 234:6 volumetric 231:20 234:10 239:7 240:2 291:5, 15 volumetrics 290:23 291:7, 8, 14 292:14 vs 214:9 < W > waived 215:12 216:14 want 220:3 221:15 224:2 236:5 266:2, 3, 4 268:3 289:21 298:3 300:4, 17 303:15 wanted 268:4 wants 261:2 warranted 250:19 251:5 WARRIOR 214:7 217:11 269:13 270:4 washed 285:3 waste 263:18, 21 264:1, 4, 17 281:20 282:9 284:14 water 241:6, 10 242:21 243:2, 2, 4,	17, 20 244:20 245:10 247:9, 10 251:5, 16, 17, 19, 21 252:13 254:9 256:20 259:6, 15, 16 260:10, 15, 16 263:16, 17 264:1, 16 265:4 290:11, 12, 13, 14, 15 296:23 297:4, 8 waterfront 303:10, 13 waters 241:11 way 220:7 224:12 230:11 233:14, 22 245:10 254:18 257:15 259:21 262:20 267:2 270:1 276:2, 23 282:14 284:13 297:1, 9 305:2 well 227:7 235:17 238:19 239:23 243:1 245:4 248:7 255:16 262:9, 23 265:20 274:20 276:8 282:18 291:13 292:23 295:2 305:13 308:20 went 220:8, 9 222:7 304:6 Wentworth 305:20 we're 221:2 224:7 228:1, 23 230:6 west 232:10 we've 273:16 whatsoever 252:2 Wheeler 242:4 whichever 290:3 William 270:12 witness 215:12 219:9 311:4 312:9 wondering 242:9 wooded 228:13 word 273:6 words 233:4 243:15 254:13 268:23 279:12 280:5 282:14	work 258:11 263:5, 6 272:16 296:20 worked 272:6, 12, 13 283:18 working 248:8, 14 283:17 world 238:15 WRITE 310:4 writing 273:2 276:8, 9 written 252:22 276:14 286:23 wrong 240:19, 20 wrote 280:21 302:8 < Y > yards 235:15, 22 237:15 293:9 294:1, 13 295:13 Yeah 227:3 233:7 294:3, 20 300:10 year 235:15 255:20 285:11 292:6, 7 years 235:9 238:23 247:8 272:16 285:14 297:18 304:8, 10 yellow 224:15, 20 225:2, 6 226:8, 18 232:17, 18, 23 233:3, 8 yesterday 227:6 253:16, 20 254:5 259:2 younger 285:13 < Z > zone 252:4 290:19
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2031 Shady Crest Drive
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WITNESS CERTIFICATION

I, Lois D. George, said witness, do hereby acknowledge that I have read the foregoing transcript of my testimony and that it is a true and correct transcription of the answers given by me to the questions propounded, except for the changes, if any, noted on the attached errata sheet.



Witness Signature above:

Printed name: Lois D. George

Sworn to and subscribed before me, this
the 18 day of July, 2018.



Gloria Goodin

Notary Public

My Commission expires: June 17, 2019

Deposition of: Lois George-235563
Taken: 6/25/2018
Court Reporter: Donna Winters

TRANSCRIPT ERRATA SHEETDeposition of: **Lois George-235563**Taken: **6/25/2018**Court Reporter: **Donna Winters**

Page #:	Line #:	Correction/Reason for change:
<u>31</u>	<u>7</u>	<u>report s/b reports</u>
<u>41</u>	<u>19</u>	<u>DNPL s/b DNAPL</u>
<u>62</u>	<u>5</u>	<u>pine s/b pond</u>
<u>62</u>	<u>16</u>	<u>is the s/b and some</u>
<u>66</u>	<u>10</u>	<u>sufficiency s/b efficiency</u>
<u>80</u>	<u>10</u>	<u>older s/b in the</u>
<u>82</u>	<u>14</u>	<u>Lawyer s/b Moyer</u>
<u>93</u>	<u>12 and 19</u>	<u>pine s/b pond</u>
<u>96</u>	<u>18</u>	<u>ending s/b entering</u>
<u>97</u>	<u>10</u>	<u>photography s/b cartography</u>
<u>103</u>	<u>19</u>	<u>pipe s/b path</u>
<u>126</u>	<u>8</u>	<u>delete the word "in"</u>
<u>134</u>	<u>14</u>	<u>Doug s/b Bill (stated wrong name)</u>
<u>139</u>	<u>7</u>	<u>should s/b would</u>
<u>163</u>	<u>10</u>	<u>Not substance s/b(?) No recollection</u>
<u>163</u>	<u>20</u>	<u>sign s/b sonde</u>
<u>164</u>	<u>10</u>	<u>sign s/b sonde</u>
<u>173</u>	<u>21</u>	<u>twelve-foot s/b twelve-inch</u>
<u> </u>	<u> </u>	<u> </u>

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Gloria Goodin

Notary Public

My Commission expires: June 17, 2019

Deposition of:

Lois George (Continuation) - #235564

Taken:

6/27/2018

Court Reporter:

Kimberly B. Dowdy

[illegible]